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EDITORIAL

APPLES AND PEARS.

WITH THE SEVERAL sections of the Australian fruit industry working out their problems on certain defined lines, interest still centres on those fresh fruits which form the major part of Australian production and export, viz., Apples and Pears.

The fact that an educational publicity campaign to increase the Australian consumption of these fruits is about to be commenced has focussed attention on the industry. Through the Australian Apple and Pear Export Council and its affiliated State Associations an approach was made to the Federal Government requesting the collection of a uniform levy that would provide sufficient finance for an adequate publicity campaign. The Federal Government has not so far provided this opportunity, but in the meantime has made a grant up to \$5,000 available on the basis of £1 for £1 with State Governments. The fact is obvious that the industry must be viewed as a whole—both for local marketing and export. An increase in consumption here will, while benefiting the health of the people, stabilise the industry as regards local sales and ease the difficulties of the export situation.

Regarding export, there are many difficulties yet to be solved, yet viewing the progress that has been made in the past few years, the future can be regarded with reasonable hope. Through the Apple and Pear Council the industry has been welded into a unit for the expression of its views, and leadership has been provided for dealing with the complexities of the local situation.

A reduction in overseas freight is in sight; a workable arrangement with the British trade has been arrived at; there has been a steady reduction in the varieties for export, while the improvement in the quality of the pack has been most marked. There is still the problem of better spaced arrivals. Even this season boats loaded at Melbourne on March 12 only arrived in London on May 31, over ten weeks on the voyage; the fruit in these ships clashed with fruit on boats loaded early in April, which arrived in London at the same time. The satisfactory early prices have not been maintained.

While the quality on the whole has been excellent, there is still lacking that uniformity which can only come through packing houses—such as are used by our competitors, particularly in the United States of America and the Argentine. There appear to be opportunities for the organising of the industry more commercially for the export trade.

In this connection the way would also be open for the better development of the local markets by means of a uniform pack of known quality. There still remains the necessity for reduction of varieties for the Australian market. This fact has been brought home to growers, and in the very near future it is hoped that the change over to approved varieties will be more rapid.

Statistics show that more Apples and Pears are yet to come into bearing. Difficult as it has been to cope with the present export season, the fact is that there is a huge crop to dispose of, particularly in the Eastern States. Hence the wisdom of Victorian growers in deciding, as they did at the Cool Stores Conference, to levy themselves 1d. per case to assist in the publicity funds.

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Market research is a subject to which attention could profitably be given. An adequate census is really needed of trees planted together with details of varieties. But are we using our markets here to best advantage? Are there not centres which are not by any means fully developed, particularly in country areas? Then again, it has been the experience in the past of our principal markets being in short supply and over supply in rapid succession—both conditions being unsatisfactory. If the present state of affairs leads to the better commercial organising of the markets and the supplying of all centres to their fullest absorptive capacity, then the present experiences will not have been in vain.

Too much poor grade fruit still finds its way to the market—fruit that is not wanted on the markets, fruit which is below the present minimum grades permitted by regulation to be marketed. Pressure to prevent such fruit coming forward should be brought about by the united intelligence of far-seeing and courageous men, whose life's work is in this industry.

Cultural Research.

While the problems of marketing are being tackled, producers are alert to adopt methods which will produce maximum returns at lowest cost. The Commonwealth Grant of £20,000 last year was wisely spent. It enabled the Departments of Agriculture to send more of their trained men out on to the orchards in field demonstration work. Spraying technique has been improved, and it is very important that this work should be continued. Much research work is awaiting attention regarding manuring.

Victorian growers in particular, who have felt for some years that the research side of their industry has not received adequate attention from the authorities, were interested to note the remarks made by the State

Director of Agriculture (Mr. H. A. Mullett) before the Farmers' Convention at Sale in April. Here are some excerpts.

"Side by side with far-reaching (if unorthodox) developments in marketing control, scientific research designed to increase the efficiency of production in the principal industries is being prosecuted with increasing vigor, and the results are being put into practice.

"With a population smaller than that of Victoria by 300,000, the expenditure in New Zealand on agricultural research and the related advisory and regulatory services is considerably greater. In addition to the Department of Agriculture, on which the net expenditure, exclusive of subsidies, is £280,000 per annum, the Dominion supports a Council of Scientific and Industrial Research, and two University colleges devoted exclusively to agriculture, i.e., Massey College and Lincoln College, and a Dairy Research Institute. It also enjoys the service of the Cawthron Institute, privately endowed with a benefaction of £250,000. There is a numerically strong and well-organised technically efficient field advisory service.

"The outstanding impression of my visit is that New Zealand is making a well-balanced effort to improve the quality of her produce and reduce the cost of production. This takes the form of an efficiently organised regulatory, research, and advisory services, supported by a well-informed public opinion."

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Growers, through their organisations, can assist in shaping public opinion along constructive lines.

CANNED FRUITS EXPORTS TO APRIL 30.

The following table shows exports of Australian canned fruits from the beginning of the 1937 season (January 1) to April 30. The figures quoted represent cases containing 2 doz. 30 oz. tins, or equivalent.

Country.	Apricots.	Peaches.	Pears.	Fruit Salad.	Pine-apples.	Total.
U.K.	41,574	179,675	238,140	755	4,937	465,081
N.Z.	3,870	10,108	4,050	—	832	18,860
Canada	3,171	18,286	1,394	—	10,262	33,113
East	1,444	3,379	2,484	857	60	8,224
Miscellaneous ..	467	838	1,290	6	154	2,755
Total	50,526	212,286	247,358	1,618	16,245	528,033

Personal

At the recent annual conference of the Orchardists' and Fruit Cool Stores Association, Mr. L. G. Cole was elected President. Mr. Cole is an experienced and widely esteemed fruitgrower and nurseryman, and his election is popular.

Mr. K. Weeding, manager, S. J. Perry & Co., exporters, of Melbourne, left for London per s.s. "Mooltan" for a visit to the United Kingdom. Mr. Weeding represents his firm on the Victorian Fruit Exporters Handling Committee, and is also a member of the Executive of the Victorian Fruit Marketing Association. In both of these organisations he has rendered good service.

Mr. F. G. Beet, President of the Southern (Victoria) Fruitgrowers' Association, has rendered good service to school children this season by donating his own fruit and organising supplies from generous local growers. Much valuable publicity for the "Eat More Apples" campaign has thus been obtained.

Mr. F. R. Mellor, fruit exporter, of Melbourne, leaves by the T.S. "Moreton Bay" for London on June 5. He was one of the original shipper members of the Victorian Fruit Marketing Association, and his advice has always been esteemed. Mr. Mellor has also acted as Chairman of the Victorian Fruit Exporters' Handling Committee in the absence abroad of Mr. J. B. Mills.

News in Brief

Drastic alterations in the wholesale and retail marketing of fruit and vegetables in New Zealand are included in the report of the Committee set up by the N.Z. Government to investigate the marketing of these products.

The annual meeting of the Southern Victorian Fruitgrowers' Association will be held at the Town Hall, Box Hill, on July 1, commencing at p.m.

Growers from several southern Victorian districts recently donated Apples for distribution in the poorer industrial suburbs of Melbourne. Opportunity was taken to impress upon the children the value of the Apple from the food and health point of view, particularly that the Apple was "Nature's Toothbrush."

N.S.W. Growers in conference at Batlow urged that a trained fruit packer be sent to U.S.A. to gain thorough knowledge of the "Crow Pack" for Apples.

Japan predicts an excellent citrus crop this year; 400,000 cases will be shipped to U.S.A. England will take small supplies, but Russia will receive increasing shipments.

The Arizona State Legislature being asked to provide a fund of £2,000 to finance a red scale survey in that State. The request comes from the combined citrus organisation and growers.

In 1936 the Californian Fruit Growers' Exchange shipped citrus fruit valued at \$245,000 to 70 foreign countries.

APPLE AND PEAR BOUNTY.

Applications by growers for bounty payments under the Apple and Pear Bounty Act on fruit exported in 1937 will close on June 30. Claim forms are available at post-offices in the fruitgrowing districts.

TASMANIA.

In the recent election for members of the State Fruit Board, the original alteration was that Mr. T. Burnaby replaced Mr. B. M. Clark.

Delegates to the Apple and Pear Council meeting will be Messrs. Thompson, Smith, Ryan, Astell and Abel. Mr. Taylor is serving as the Tasmanian representative on the co-ordinating committee to handle the Apple publicity campaign.

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Insect Pests and their Control

CODLIN MOTH CONTROL (WINTER TREATMENT) — CUTWORMS — YELLOW MONOLEPTA BEETLE — SILVER LEAF DISEASE — BLACK BEETLE

Notes Contributed by Officers of the Entomological Branch, N.S.W. Department of Agriculture.

Codlin Moth (Cydia pomonella).
DURING THE PAST SEASON results obtained in the control of Codlin Moth have generally been satisfactory, and this is mainly due to the exercise of greater care by growers in applying sprays, and increased attention to supplementary control measures.

Destroy Over Wintering Grubs.
During the Winter, the trunks of the trees should be scraped free of loose bark, and the cracks and crevices examined for sheltering larvae. Broken limbs should be removed, and, finally, all likely cocooning places should be filled in with putty or some similar mixture.
This routine treatment may be well combined with pruning, and results in a very apparent reduction of the spring brood.

Fallen and Infested Fruit.
Fallen fruit must be picked up and destroyed by boiling or burning or placing in a suitably constructed waste-fruit pit.
The use of the pit method is compulsory in the Murrumbidgee Irrigation Areas, but owing to the economy, effectiveness, and labor saving involved in this method, a more general adoption is strongly urged.
During an examination of fallen fruit, 6,884 immature larvae were destroyed, whereas bandages on the same trees caught only 2,482. Further, larvae can mature in fallen fruit even when such fruit may be only one inch in diameter.

Bandaging.
The use of bandages is compulsory only in the Bathurst district, although its value as a supplementary measure is recognised by many growers outside that area, and bandaging is voluntarily adopted by them.
Chemically-treated bands have now been in use for several seasons, and have proved of considerable value.
Injury to the bark has resulted on young, smooth-barked trees, and a small percentage escape of moths has taken place during the Summer. In some instances the escape from chemically-treated bands has been too large, and growers are advised not to place these bands in position too early in the season, as a loss in effectiveness will then take place. The removal of the bands in January and replacement with new ones are well worth consideration.
In spite of these disadvantages, the chemically-treated bands are regarded as the most important advance in Codlin Moth control during the past few seasons. Care should be taken to see that they are destroyed during the Winter, as they will be found to contain numbers of living grubs. As the chemicals used for the impregnation of the bands are inflammable, the bands may be conveniently burnt in a kerosene tin provided with a few holes in the side, and carried by means of a long handle.
A thorough examination of the

rough and scaly bark of the tree trunks should be made at the time of removal. Special care should be taken to destroy any grubs sheltering between the tree and the band or that fall to the ground.
Packing Sheds.
During the rush of harvesting and packing, fruit boxes and storage rooms are often used for the temporary holding of infested fruit.
Mature larvae leave the fruit to seek cocooning places in the boxes, about the walls and even about the grader. While this has no detrimental effect during the current season, it is a very prolific source of moths for the next season.
Every endeavour should be made to have the packing sheds moth-proofed, or, failing this, to dip the cases in boiling water for three minutes, and particular precautions about the prompt disposal of infested fruit should be taken. The use of pits for this purpose is again emphasised.

CUTWORMS (Noctuidae)

For Control, Poison Baits are Effective.

CUTWORMS have been unusually abundant this Autumn, and in some areas have caused considerable losses. Although there are several species of Cutworms, they may be described, generally, as stout, soft-bodied caterpillars, black or slaty-brown in color, which curl up characteristically into a spiral form when disturbed. Most species shelter in the soil during the day, and feed at night, but the army-worm feeds during the daytime, and when abundant it moves in vast armies of caterpillars over cultivation and pasture, stripping the plants bare of foliage.
Serious Cutworm outbreaks often follow where areas have been flooded.
Life History.
The adults are greyish-brown or black moths, which measure about 1 to 1½ inches across the outspread wings.
The moths lay their eggs on grasses and weeds so that the Cutworms have already hatched and are in the soil when the ground is being prepared for cropping. Plants may be attacked as soon as they appear through the ground or where Cabbages and Cauliflowers or Tomatoes are planted out the stems may be cut through at ground level. If the stems are too tough the Cutworms may climb up the plants and feed on the foliage.
Control Measures.
The use of a poisoned bait, made according to the following formula, has been found invaluable in controlling Cutworms:—
Paris green 1 lb.
Bran 24 lb.
Water 2½ gallons
Salt 8 oz.

White arsenic, when substituted for Paris Green, is found to be much less attractive and less effective. Should difficulty, however, be found in obtaining Paris Green, 9 oz. white arsenic or arsenite of soda may be substituted. Treacle (20 oz.) can also be used in lieu of the 8 oz. salt, while the addition of some finely chopped Lemons to the water when mixing the mash renders the bait more attractive to the Cutworms.

It is important that the bran and the poison should be thoroughly mixed while dry, and then made into a damp crumbly mash with the water.

If arsenite of soda is used this needs to be dissolved in the water before mixing with the bran. The mash can be spread along the rows of the infested plants, or broadcast through the crop, but in soil where Cutworms are already known to be numerous, the bait should be broadcast over the area at the rate of 20 to 30 lb. to the acre, several days before the crop is planted. It should be remembered that the bait is poisonous, and should consequently be kept out of reach of stock.

In the case of the Army Worm, a deep furrow, with one side vertical, cut in front of the advancing caterpillars temporarily checks their progress. Holes can be dug at intervals in the furrow and the caterpillars that fall into them may be destroyed. A log drawn along the furrow will crush a large number of the caterpillars, or they can be killed in the furrow by spraying with any concentrated oil emulsion.—"N.S.W. Agricultural Gazette."

THE YELLOW MONOLEPTA BEETLE

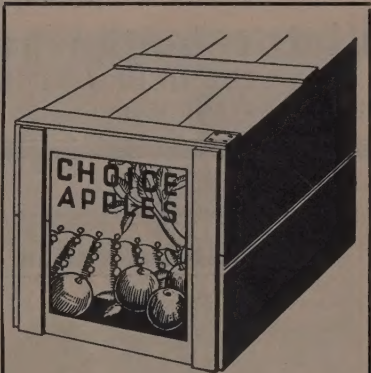
Pyrethrum is a Valuable Remedy.

During last year the yellow Monolepta Beetle became very prevalent in some districts in N.S.W. Crops of French Beans, Citrus, Maize, Arrowroot, Strawberries, Mulberry, Fig, Peach, Plum, Grape, Wattle, Roses, Iceland Poppies and Dahlias were attacked.
In reporting on this matter, Mr. C. R. Wallace, B.Agr.Sc., Assistant Entomologist, N.S.W. Department of Agriculture, writes in the Department's Gazette stating that many controls were tried, some being very effective. At Tuncester, near Lismore, this pest was causing heavy losses in French Bean crops. Arsenicals could not be used on vegetables required for immediate consumption, besides, they were not very effective. Good results were secured with pyrethrum and with pyrethrum mixed with a 3 per cent. nicotine dust.
At Wardell, Orange trees were attacked by Monolepta beetles and the following dusts were applied from a dusting machine:—Pyrethrum dust (undiluted); pyrethrum with 3 per cent. nicotine dust (equal parts by volume); nicotine dust, 3 per cent. The first two mentioned dusts were very effective, i.e., those embodying pyrethrum. The beetles rapidly disappeared from the trees when either of these were applied. Pyrethrum is very effective when undiluted, but it is not known whether it is so effective when diluted with a cheap filler.

A Mulberry tree near Broadwater was infested with Monolepta. A dust of pyrethrum-kaolin (equal parts by weight) produced much the same results as the undiluted pyrethrum dust previously employed.
At Tuncester, sprays of pyrethrum extract (1 fl. oz. to 4 gallons water), nicotine sulphate (1 to 640) and pyrethrum-nicotine (1 fl. oz. pyrethrum plus 2 fl. oz. nicotine sulphate to 8 gallons water) were tested, using 1 per cent. white oil as a spreader. None of these were successful, and it was noticed that the sprays with pyrethrum paralysed the beetles and brought them to the ground. The next day they had recovered and re-infested the plants. Another trial was carried out, using pyrethrum extract to cause the beetles to fall from the trees; this was followed by a tar distillate spray (1 to 20 with water) directed on the beetles on the ground. This was quite successful, but since it involves two sprayings, cannot be advised in preference to dusting where pyrethrum is obtainable.

Summary.

The above six treatments give some degree of kill, but the three outstanding treatments are:—Pyrethrum dust, undiluted; pyrethrum, 3 per cent. nicotine dust (equal parts by volume); Pyrethrum-kaolin (equal parts by weight).
These three give an average kill of 90 per cent. or over.
In dusting fruit trees, etc., it is important to dust the beetles on the ground to ensure good results.



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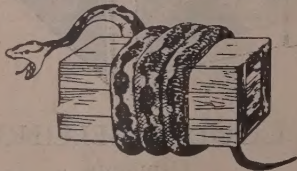
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Silver Leaf Diseases in Orchard Trees

The above-mentioned subject was chosen by Mr. D. B. Adam, Plant Pathologist at the Waite Agricultural Research Institute, South Australia, for a 10-minute talk (reported below) over the National Broadcasting Station, 5CL, on March 16.

P LUM TREES growing in the hills around Adelaide, sometimes produce foliage of a silvery leaden color, which contrasts with the dark green hue of healthy leaves. This change in the appearance of the leaves represents the beginning of a disease, which, unfortunately, has become more prevalent in recent years in this State.

"Silver Leaf" disease, as it is called, is caused by fungus named *Stereum purpureum*. The fruiting bodies of this fungus develop on the dead branches of affected trees, appearing after heavy rain, as thin, purplish colored brackets with wrinkled margins projecting 1/4 to 1/2 an inch from the wood.

The smooth, exposed surfaces of these fruiting bodies produce myriads of exceedingly small spores, which like the seeds of ordinary plants, serve for reproduction. These spores are carried about by air currents, and if they happen to alight on a fresh wound on a Plum tree, germinate there, giving rise to a spawn which grows into the wood of the tree.

What ultimately happens depends on the position where infection has occurred, the variety of Plum and its vigor. In a typical case the leaves on the branch, which has been infected, become silvered in the following Spring. This "silvering" may be repeated for one or two seasons. It is only after a branch has died that the fungus produces its fruiting bodies, and for this purpose it requires a good Winter rain.

Although "silvering" followed by "dieback" is quite a common sequence of events after infection, it is by no means the only course that is followed. Sometimes a tree may show a silvered branch for two or three seasons, and then recover its normal foliage. This is generally a real recovery, and is due to the production of a barrier of gum around the fungus, which stops its further growth. The capacity to do this depends on seasonal conditions, the variety affected and its vigor and growth.

This brings me to the first difficulty we have regarding this disease as it occurs locally.

"Silver Leaf" is well known and seriously regarded in England, with the result that it has received a good deal of attention. In Australia, apart from its identification, practically no experimental work has been done with the disease, and one has to rely for facts on the English investigations. On many points the detailed work of Prof. Brooks and his associates at Cambridge is of great value to us, but there are points of detail which can only be solved by local investigation and study. The comparative resistance of different varieties is one of these. I have been told that the variety "Grand Duke," for instance, is resistant to "Silver Leaf," but the information available is not sufficiently broad-based to permit of confident recommendation on the subject. A systematic survey of Plum orchards in the districts where "Silver Leaf" occurs would yield useful information. With regard to seasonal conditions and plant vigor, it is probably safe to assume that the same factors apply

here as do in England, viz., warm Summers and vigorous growth of the part of trees, lead to their natural recovery.

Before passing on to consider the control measures of this disease I should like to mention one or two facts about the disease.

Firstly, as regards the "silvering." This is not due to the presence of the fungus in the leaves. It is an example of action by the fungus at a distance. The fungus is confined to the wood in the neighborhood of the cut at which it entered. In this situation the fungus apparently produces a toxin, a poisonous substance, which is carried in the sap to the leaves, where it brings about the changes responsible for the silvered appearance.

A second point of interest is the range of plants susceptible to "Silver Leaf" disease. Plums are the most susceptible of orchard trees. Apricot are also often "silvered," but they together with Peaches and Apples possess considerable powers of recovery. Many other plants have been described as susceptible to "Silver Leaf." Mr. E. Leishman, Horticultural Advisor for Mt. Lofty Range district, for instance, told me that he has observed the disease in the tre lucerne. In England quite a number of deciduous trees, rambler roses, and even rhododendrons have been found to be susceptible to it. In Australia our native forest trees fortunately appear to be immune. I would like to emphasise the practical bearing of this. As we shall see presently, the basis of controlling this disease is sanitation, i.e., the elimination of the fungus from our orchards. In this State, partly because climatic conditions are probably not as favorable as they are in England, but mainly because the number of hosts upon which this fungus can flourish are not so very numerous, we have, if we like to tackle the job resolutely, on a community basis, a reasonably good chance of eradicating the disease altogether from the State. The disease is almost certainly an introduction, and its nature is such that its eradication should be possible.

Now let us consider methods of control. The first point to bear in mind is the mode of infection. This takes place through cuts or broken branches that expose the wood. Infection almost certainly takes place during the Winter months, because at this time the spores of the fungus are present in the air owing to a neglect on the part of some who, having branches killed by "Silver Leaf," have permitted the fungus to produce its fruiting bodies. In addition it is during the Winter months when the growth responses on the part of the trees are slight, that the susceptibility to infection is greatest. In mid-Summer, indeed, it is practically impossible to produce an infection even where the fungus is artificially introduced to a freshly made cut.

A second point to bear in mind is the influence of the size of the cut on the risk of infection. The prospect of infection through small secateurs cuts is small compared with the cut of 1/4 of an inch or more made with a saw. These considerations should guide pruning practice. As far as possible the trees when young should be trained so as to grow to the desired shape without the necessity of making large cuts at a later date.

Where heavy cutting is necessary one or two courses may be followed the first, from the point of view of

nt pathologist, being the better
king. This consists in delaying the
ring of any heavy cuts until early
nmer. This will probably mean
sacrifice of some fruit, but it is
afe course to adopt, as the healing
cesses of the tree are rapid, and
risk of infection is low. It is
necessary to treat any such
unds. On the other hand, if the
avier cuts are made at the usual
ining time in Winter, any such
s should be dressed. For ordinary
hard purposes a home-made thick,
ite lead paint provides a satis-
fatory protection. A recipe for this
posed by Mr. Brooks is as
lows:—To 2 lbs. of white lead
ste (as bought) add two teaspoon-
s of paste driers and two tablespo-
ns of linseed oil. Mix, then add two
blespoonfuls of turpentine and
ix well.

The second matter to consider is
at to do if "Silver Leaf" turns up,
d it is very desirable to look for
ns of this in early Summer. If
is found the branch is not heavily
ilvered," and previous experience
the district indicates the possi-
lity of recovery, the branch may be
fely left in the meantime. On the
her hand, if previous experience
ggests that the chances of recovery
e small, it is a safer plan to do
omething about it straight away.
ne infested branch should be cut
wn to some lateral below the ap-
arent point of infection. If the
ood of the branch shows gummy dis-
olorations at this point, the cut has
t been made low enough. At times
suitable lateral to fill the gap made
branch removal may not be avail-
ble. In such cases, by leaving a
eg-like stub of the branch it may be
ossible to promote fresh shoots, one
two of which may be used to re-
uild the tree.

During the same inspection, trees
hich were observed to have been
silvered" in a previous year, and
ad been left should be carefully
xamined for signs of "dieback," and
this occurs or the "silvering" is
ecoming more severe, steps should
e taken to cut it out in the way
lready described. If the infection is
ose to the butt of the tree it will be
ecessary to remove the whole tree.

All "silvered" and dead branches
ould be burnt as soon as possible
fter removal. If added to a heap
f prunings kept for firewood, they
re sure to produce fruiting bodies
ome time the following Winter, and
o provide new sources of infection.
The Department of Agriculture
arly last year introduced a new re-

The Black Beetle

Cultural Methods for Control.

THE BLACK BEETLE (*Heterony-
chus arator*), a South African
species, is a serious pest of
vegetable crops, Maize, Sugar Cane,
and flowering plants, state Entomo-
logical Officers of the N.S.W. Depart-
ment of Agriculture, in the Depart-
ment's Journal for May.

When plants are attacked, the
beetles bore into the stems below the
surface of the ground, thus weaken-
ing the plant, and sometimes causing
them to die. The plants are attacked
when they are quite young.

Sowing in virgin grass country
already infested, or by beetles crawl-
ing from adjoining grass country
appear to be the causes of infestation.
Cultural operations or late sowing is
therefore quite effective in destroying
the pests. The ground should be
ploughed late in Autumn, and culti-
vated so as to keep it free from
weeds.

Where beetles have been seen
crawling into crops from adjoining
areas of low-lying paspalum country,
some protection may be obtained by
making a deep vertical-sided furrow
along the edges of the crop. If post
holes are dug in these furrows the
beetles accumulate in them and can
be easily destroyed.

Adult beetles live throughout the
Winter, and become active in the
early Spring, when most of the
damage is done. These beetles con-
tinue to cause injury until late in
October, when, after laying their
eggs, they die.

gulation to deal with "Silver Leaf"
along these lines, and I was pleased
to hear from the Chief Horticulturist
recently that the general situation
with regard to dead branches in Plum
orchards has greatly improved this
year.

At the conclusion of his remarks,
Mr. Adam stated that it was then
(March 16) not too late to cut and
destroy dead Plum branches, and
thus prevent "Silver Leaf" spreading.
He urged those who had been a little
careless in this matter to give it
immediate attention, both in their
interests and in the interests of fellow
orchardists.—"S.A. Journal of Agri-
culture."

Granny Smith Apples

How to Control Scald.

Scald development in Granny Smith
Apples can be minimised by observ-
ing the following rules:—

1. Pick Apples at right degree of
maturity—when the fruit has lost
that "woody" taste, and when the
ground color of the fruit changes
from dark to light green.
2. Hold fruit in common storage in
a well ventilated shed, for a period
of two to six weeks, according to the
climate, e.g., for four weeks to six
weeks in a cold climate, and for two
to three weeks in a hot climate.
3. Enclose Apples in oiled paper
containing not less than 14 per cent.
of oil prior to placing fruit in cold
chamber.
4. Hold the fruit in a well-
ventilated chamber at a temperature
of 33 to 34 deg. F.
5. Do not hold for long periods
fruit which has been harvested from
young trees, nor from any trees
(young or old) which are only carry-
ing a light crop.
6. For long storage obtain fruit
from matured trees growing in light
soil which are carrying a normal crop.
This particularly applies to districts
in which the rainfall is heavy.
7. Do not hold the fruit too long in
common storage, for an excessive de-
layed storage period has a tendency
to encourage the development of
lenticel spot and other fungal rots.
In addition, the skin of the fruit be-
comes too yellow and the cold storage
life is greatly reduced.

NEW INSECTICIDE.

Eliminates Arsenical Residue.

The elimination of arsenical resi-
due on vegetables and some varieties
of fruit is predicted by the N.S.W.
Department of Agriculture, which
has been investigating the use of a
new insecticide known as Derris dust,
obtained from the root of a plant
found only in the Amazon basin in
South America.

Up to date, arsenate of lead has
been the accepted form of spray, but
the residue problem in vegetables
has precipitated a search for a sub-
stitute and derris root is claimed to

Peach Tip Moth

Extensive observations have
been made in the Murrumbidgee
Irrigation Area as to the
damage from the moth to ripen-
ing fruit, and the tips of young
trees. Mr. E. J. Watson,
Assistant Entomologist, now
reports that although he found
some damage in young trees
throughout the season, it was
not apparent in the old trees
after the Spring hardening. The
loss of fruit was practically nil,
as only an odd tree here and
there was found to be infested.

He reports that Codlin Moth
was found more prevalent than
Peach Tip Moth. Parasites
from coastal orchards had been
transferred to several orchards
in Griffith, where the pest was
present, and some parasites
from U.S.A. were obtained for
the C.S.I.R. station at Moor-
oopna.

meet this problem. The cost was
against general use of derris dust,
but experiments have proved that,
when mixed with arsenate of lead, the
residue is minimised.

In vegetables it has been demon-
strated that if they are treated, when
necessary, with arsenate of lead up
to within six weeks of cutting, and
then with derris dust, they can
be marketed free from objectionable
quantities of residue. The experi-
ments are being continued.

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MELBOURNE, C.I.



DAYLIGHT ROBBERY!

If orchard pests were big as hares you'd see them on the job and go after them with a gun! Because they are microscopically small, hide or hibernate in the ground or bark, and emerge to work by stealth, you may get a feeling of false security. Invariably a scientific spray programme is necessary for prevention and control of their "daylight robbery."

Gargoyle RED (the famous DORMANT oil spray), Gargoyle PALE (for use with Bordeaux), and Gargoyle WHITE, "the Summer Spray" (for use with Nicotine, Lead Arsenate or alone), will enable you to exercise complete control over ALL pests, fungus and insect, on all your trees in every season.

Gargoyle products are unrivalled for Quality and Efficiency . . . and they are made in Australia.

SPRAYING GARGOYLE OILS

New South Wales

The Murrumbidgee Irrigation Areas

Griffith.

ABOUT 400 miles west of Sydney is the prosperous town of Griffith, in the Murrumbidgee Irrigation Areas, the farmers being producers of wool, wheat, rice, fruit and stock.

About a mile east of Railway Station, and served by railway, is the Griffith Producers' Co-op. Co. Ltd., whose Secretary Manager is Mr. Malinlinson, and directors Messrs. V. C. Williams (chairman), A. J. Lenahan, P. C. Cox, J. C. Thorne, W. C. Elder, A. E. Matthews, T. B. Oakes.

This establishment supplies every orchard requisite; fruit is prepared, packed, graded and marketed.

The company's large packing house is lofty, well ventilated, fitted

with indirect lighting, making everything as comfortable as possible for its employees, equipped with the most up-to-date, expeditious, efficient, washing, drying, grading and packing machinery procurable. The company employs a large staff of experts to handle this fruit, all wearing gloves, to avoid any damaging. When in full swing at the peak period, 1,400 lug cases (each nearly 1½ bushels) of Oranges are completed ready for export or otherwise per day. Mr. Park superintends all the packing house business, the results proving his captainship. The lug cases are the property of the company, one man constantly sterilising them. These are used by growers for carting their fruit into the company.

The cool store, under direct expansion system, built, designed, and equipped by "Werner," is unique in its construction, having cement walls, timber lined and packed, with access and egress to and from the chambers, through doorways 4 ft. above the floor; the fruit is carried from vehicles by roller conveyors to the chambers and out to the railway on other side in like manner. Mr. Shepley, the engineer, states that the system is working well, and that an extension on similar lines will soon be made.

Next to the producers' establishment is the Leeton Packing Co.'s branch, which process and packs everything in the dried fruit line (details in later issues).

Opposite here is the foundation for a huge factory, up about 6 feet above ground surface. This was built 20 years or so ago by the Government, and abandoned, thousands of tons of bricks, cement and much labor wasted, and perhaps £25,000 in cash; no one seems quite clear about this matter.

(To Be Continued.)

N.S.W. Bananas

Proposals for Grower Controlled Ripening Rooms in Sydney.

"Properly equipped Banana ripening rooms are needed at the Sydney markets," states the Secretary of the N.S.W. Banana Growers' Federation, Mr. A. Buckley, "and as these should be under grower control, enquiries regarding costs of erection and equipment are being made."

Levy for Advertising Favored

The annual conference of the Central Western Tablelands Fruitgrowers' Association was held at Orange early in May, Mr. A. U. Tonking M.L.A., presiding.

Fruit Containers: It was decided that the Department of Agriculture be asked to carry out investigations into the possibility of cases being manufactured of material other than timber.

Fund for Advertising: Owing to the likelihood of a serious glutting of Australian markets with Apples, it was recommended that a levy of no more than 1d. a case be placed upon Apples sold for local consumption the amount so raised to be spent upon advertising.

Packing Demonstrator: A resolution was carried supporting the re-appointment of Mr. Whittaker as special packing demonstrator.

Control of Selling Agents: Conference unanimously adopted a resolution requesting that Fruitgrowers' Federation of N.S.W. to vigorously pursue its efforts to obtain stricter and more business-like control of the selling agents.

The following delegates were selected for annual conference: Messrs. W. B. Pascoe, R. Campbell, A. Northcote, J. C. Ironmonger, A. Packham, S. Stanford, V. Campbell, E. Bartlett, J. Wright, E. Roweth. Messrs. Tonking and Rae were appointed to represent the central tablelands on the board of the Federation.

At the Southern Districts Conference of the Fruitgrowers' Federation of N.S.W., Mr. T. A. Tester presiding, it was decided to ask the Department of Agriculture to interpret the grading regulation in terms of counts instead of sizes; that the Pome industry be organised as a section of the Federation; to recommend that an experienced fruit packer be sent to U.S.A. to study the "crown" pack of Apples.

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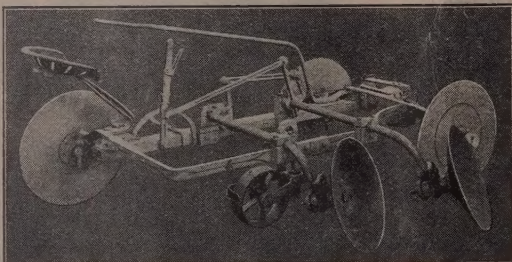
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The steering arms are drop forged from the best mild steel and the main wheels are equipped with ball bearings.

Two medium horses can work this machine all day without tiring. A machine may be obtained for a trial at any time.

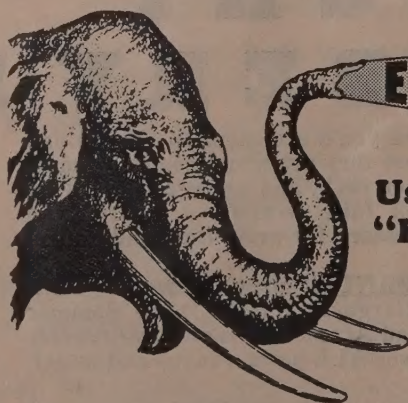
A sturdy, strong plow equipped with reversible discs to enable the operator to plow up to, or away from the trees. Operated by a single lever and with nothing to catch branches of trees. To facilitate the movement of the plow around the orchard the discs are movable and lift clear of the ground.

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Extract "BETTER FRUIT," U.S.A., February, 1934: "Idaho Spray Programme for Codlin Moth Control, 1934," by Dr. Claude Wakeland, Department of Entomology, University of Idaho. Experiments in the State for the past six years have shown that LEAD ARSENATE is the best, as well as the most economical insecticide that we have tested for Codlin Moth control. Entomologists are agreed that there is no substitute for Lead Arsenate that can be recommended to the public.

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S.A.—Silbert, Sharp & Bishop Ltd., Rundle St. E., Adelaide.

W.A.—Westralian Farmers' Ltd., 569 Wellington St., Perth.
Tas.—R. Nettlefold Pty., Hobart. Bell & Gerrard, Launceston. Cocker, Bell Pty., Devonport.
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FRUIT GROWERS generally have come to depend on "Elephant" Brand Sprays. They find them absolutely reliable, efficient and of guaranteed quality.

Pears Grown Without Blossoms

INTERESTING DEVELOPMENTS IN RUSSIA

Fruit is Firm and Sweet, But Has no Seed or Seed Cells

The Phenomenon is Being Scientifically Studied

(Continued from "Fruit World," April, 1936.)

In the April, 1936, issue of the Fruit World and Market Grower, we published a very interesting illustration on the subject of vegetative pears. The fruit, which was firm and sweet, had no signs of seeds nor seed cells, the fruit being formed by leaves grown closely together, as distinct from pears and other fruits which follow blossom and fertilisation.

Mr. F. M. Read, M.Ag.Sc., in commenting on this matter, remarked on the great interest from a botanical point of view, but could see no commercial benefit by its adoption in Australia. The Agricultural Experimental Station at Sotshi, Russia, has courteously forwarded additional information and pictures which are published herewith.—Ed., "F.W. & M.G."]

Vegetative Pears.

IN 1935 WE PUBLISHED in the magazine "Soviet Botany," a brief article on the development of the vegetative Pear. This article has attracted a considerable amount of attention, amongst leading world experimental stations, and the foreign press. Requests for fuller details and specimens have been received from the Imperial Horticultural Institute, East Walling (England), the Horticultural Experiment Station, Geneva, N.Y., U.S.A., and Utrecht (Holland).

The article itself was published in slightly abbreviated form in the Australian "Fruit World and Market Grower" (April), and in the American publication "Better Fruit" (Aug., 1936).

The interest taken has prompted us to give a fuller description of this phenomenon, based not only on the observations of 1935, but also on further research carried out in 1936.

In Soviet literature it is pointed out that in Pear growing it has been noticed sometimes that a particular growth of stalk (pedicel) leaves, and occasionally of the leaves themselves takes place, which, by the character resembles the pericarp of an ordinary fruit.

A similar case of metamorphism

is described by the agriculturist Tscherin and famous Soviet horticulturist Mitchurin. This has been called the **Vegetative Pear**.

Being interested in the phenomenon of vegetable growth of the Pear, the research section of the Sotchi Agricultural Experimental Station has combined with the Experimental Orchards of the Black Sea Region and with their co-operation has located in different regions three trees, on which the growth of the Vegetative Pear has been noticed. Two of these, one located at the Sotchi Station and the other at the Collective Farm (Mechailoiski Pereval) gave two insufficiently characteristic fruits. This phenomenon did not repeat itself in the succeeding years. However, a tree was found in 1935 in the Children's Com-



Fig. 1—Tree with developing vegetative Pears. In 1936 normal flowers were hand fertilized. Photo shows fertilization being carried out.

mission Gardens, at Tuapse, which had all the specific characteristics of the Vegetative Pear.

The Vegetative Pear

was first noticed by a gardener, Kus-

netzov, in 1934, and he considered it as a form of disease. It is questionable whether this phenomenon took place before 1934, since little attention has been paid to this neglected tree.

This particular tree, which has not yet been named, has been grafted about ten years ago on to a wild Pear. The height is over 1.5 metres (fig. 1). The tree has not been cultivated and the surrounding soil has not been worked, while the root growth was not cut and grew in abundance around the trunk. The crown of this tree is thinly scattered and has a very scattered appearance.

Normal blossoming occurs in April, and during this period no signs of vegetative formation are noticed: 20-25 days after normal blossoming the tree begins to blossom a second time, and on a smaller scale the blossoming continues even for little periods.

During the second blossoming a part of the flowers, although they appear to be weakly developed, nevertheless are normal. Part of the flowers have an undeveloped corolla, stamens, pistil and a normal developed calyx.

Without preliminary fertilization the egg-cells of the calyx begin to grow.

Since on the shoots of vegetative fruit, leaves are often found, the growth embraces them and thus it ap-



Fig. 2—Vegetative Pears, 1935 crop.

pears to be a combination fruit from reproductive and vegetative organs.

Contemporary with the development of this combination fruit there begins to grow up separate branches, stalks, leaves, buds, without even undeveloped blossom organs.

We thus have three types of fruit on one tree: normal (predominant), combination and vegetative. All of the more interesting specimens have been photographed or drawn and preserved in formalin.

Sometimes this phenomenon is only expressed by the leaf buds, numbering four, five ten or more. In other cases further growth and combination of bud, leaves, stalks (scions), and split pieces of leaves are noticeable, the ends of which being joined on top, produce a false impression of a cell calyx.

The characteristic feature of the vegetative fruit is a band which gives the impression of a fruit growing out from another and sometimes there is a third one, the area of the band is covered with shortened leaves.

Cases have been noticed when one or several leaves have not partaken

Fig. 3—1936 crop.

Left: Normal Pear.

Right: Normal Pear, but undeveloped because of late blossoming.

Middle: Three vegetative Pears.



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Fig. 4—Normal Pear with leaves, 1935 crop.

in the formation of the fruit. In such cases these leaves are attached to the fruit on one side from its formation. (Fig. 2-C.)

In 1935, on the tree referred to, 17 well-formed vegetative fruits have been noticed, and also a number in the early stages of development, which finally did not complete its development. (Fig. 2-C.)

In spite of the fact that in 1935 all branches which showed signs of vegetative fruit formation were cut off for grafting purposes, neverthe-

less, in 1936, this phenomenon, although on a smaller scale, was in evidence (Fig. 3).

Fully developed Vegetative Pears are of 6 cm. high, 4.5 cm. in diameter, and differ in form to normal Pears.

During the growth the green skin turns to yellow. The vegetative fruits ripen about two weeks later than the normal, and in taste, differ in no way.

The normal Pears (Fig. 4) in form and size resemble the Pear "Clapp's Favorite," but are more round, and have a more pronounced calyx, and a fairly rosy color on the sunny side. They ripen towards the end of June, and, being of soft flesh, are sweet with a light shade of acid.

It is to be noted that many Pears have been found, which in outer appearance resemble the vegetative Pear, but on cutting these they have been found to have at least rudimentary seeds or seed cells, which in vegetative Pears are always absent (Fig. 5.) The fruit referred to is undoubtedly a result of teratogeny (i.e., a monstrosity).

Experiments With Grafting.

For a deeper study of the above phenomena, part of the graftings were made to the crown of a Quince tree (*Cydonia Vulgaris pers.*) and Pear; grafted to the Quince tree. With the object of speeding up the development during the Winter, the



Fig. 5—Vegetative Pears and cut through one, 1935 crop.

plants were placed in a hot-house, and this gave rise to a very interesting phenomenon.

The grafts took well, but the growth was weak and ceased during the warm Spring days. In spite of the favorable conditions for vegetation during the Spring, Summer and early Autumn, the plants showed no sign of growth, and only after the cold September did part of the branches being to grow, while the other part of the very same tree shows no sign of growth to date, 22/9/36 (Fig. 6).

A small number of scions were grafted on to the crowns of open wild trees.

The grafts were in the open air during the Winter and in the Spring

developed vigorously and grew to over 1 metre long. Part of this growth we had to cut off for further graftings, and several scions were sent to the selective-genetics experimental stations, "Mitchurin." Thus we were unfortunately unable to accede to the requests for supplies of scions for the experimental stations in U.S.S.R. and abroad.

The basic question then arises of whether this special case is peculiar to this particular tree, or is it a result of certain external conditions. Judging by this year's observations, external conditions had no significance as the branches were isolated, and in addition, the external conditions should have a similar effect on trees growing in the vicinity. It can be supposed that the effect of any internal causes suppresses the development of the blossom organs and preserves only the vegetative development of leaf organs, which in normal fruit takes place after fertilisation, and in the case of parthenocarpic fruit without fertilization.

It is possible that they are capable of forming a pure vegetative fruit similar to tubers and bulbs, as is noticeable with many plants where such formation takes place from the blossom and vegetative buds.

In addition the description of this phenomenon leads to the necessity of deeper study of the formation of Pears and other seed fruit where in practice under the term of fruit we understand the pericarp of the blossom, botanically termed "false fruit." The growth of the "fruit may take place without fructification (parthenocarp), consequently the union of the two sex cells—gametes, is not a necessary condition.

If "false fruit" forms a part of well grown inflorescence, then the latter, in the process of evolution, having undergone a number of changes has evolved from some other growing organ.

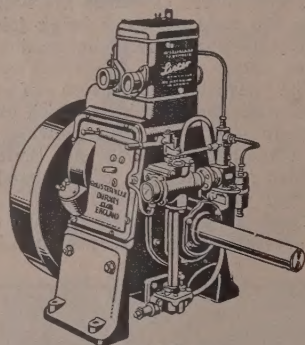
Gete stated in 1790, he understood that sepal, corolla stamen, fruit-bearer leaf and other growing organs were a process of leaf changes.

V. K. Gardener, F.G., Bradford; G. D. Hooker, in the book of "Principles of Horticulture," treat the leaf as a metamorphic branch to which are attached several rings or groups of organs which in some respects are analogous to leaves.

A parallel development is the case of a Cabbage Rose which has double green flowers, which, in reality consist of a group of leaves, arranged similarly to the petals of the double flowers.

Examples in Metamorphism are very numerous in modern science, but the case of the vegetative Pear is one of the most interesting. If we assume that vegetative fruits are a case of flower metamorphism, then with even greater certainty flower calyces from which the development of fruit takes place may be taken as example of metamorphism.

Comments on articles on the vegetative Pear which appeared in the Fruit World & Market Grower and Better Fruit imply, that the above phenome-



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5. Lister Diesels are EXTRAORDINARY—they are really wonderful engines. With an engine of poor design and cheap make, the cost for repairs and wasted time will soon bring the price far above a trouble-free, long-lasting Lister.

Prof. Huckle, Massachusetts Institute of Technology, U.S.A., says he considers the Lister the most important and most successful development in small Diesels.

We can show you great savings on your cost to store fruit. Ask for Information.
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This is not merely the manufacturer's claim, but represents the results obtained by hundreds of commercial growers all over Australia.

Be sure, however, it is Cooper's "Ovicide" the original Tar Distillate Wash used in Australia.

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is one great botanical interest, though of little commercial importance. It is pointed out, however, that cultivation of such a fruit may of great value in regions affected by rain, fog, frost and dust.

F. M. Zorin,

(Translated from Russian by F. Shnukal.)

Comments on article from Russia on the Vegetative Pear.

(By F. M. Read, M.Ag. Sc. Chief Inspector of Horticulture, Vic. Department of Agriculture.)

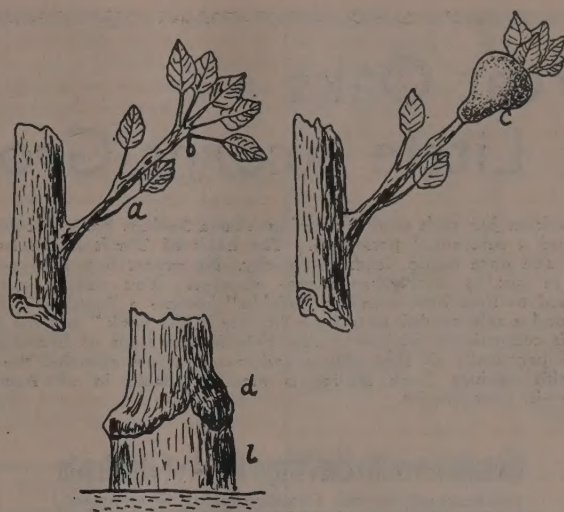
I have been interested to read this much fuller description of the vegetative Pear work going on in Russia than was given in the April, 1936 issue "Fruit World."

Certain comments similar to those, which I made on that occasion would appear to be again appropriate and desirable for a fuller understanding of your readers of the work described.

It should be borne in mind that whereas the whole of such a fruit, as a Peach arises from cells which have taken part in actual reproductive processes, the edible part of the Pear is really not of this character at all, but an enlarged growth of the stem at the base of the flower. It is usually

supposed that the fusion of the pollen nuclei with the nuclei of the ovaries gives a stimulus to this vegetative growth of the stem which produces the edible Pear. The nature of the actual stimulus is by no means clearly understood, but it is held by some to be due to the liberation in the reproductive process of minute traces of an activating substance or hormone.

There is no doubt that fertilisation in an ordinary Pear does have a stimulating influence on growth. In the Goulburn Valley region of Victoria, where W.B.C. Pears are grown with relatively inadequate cross-pollination, fruit is produced which is often seedless and usually has very few seeds. This appears to result in the production of a Pear definitely different in shape from Williams of other regions, where cross fertilisation is abundant. Incidentally, it appears to be of superior shape, and the absence of seed is certainly, from the canning point of view, an advantage. Another instance of the stimulating effect of reproduction on growth may be seen in the Apple which, when cut across transversely, is seen to have five carpels with a maximum number of 10 seeds. Where pollination is reduced, all of these seeds do not develop, and one frequently sees that the seeds have developed on one side



VEGETATIVE PEAR.

- (a) A yearly shoot or sprout or sprig.
- (b) End of a yearly shoot, sprout or sprig with a group of leaves, the lower part of which produces the vegetative fruit of a Pear.
- (c) Vegetative fruit with rosette of the rest of leaves on the upper funnel.
- (d) Lower part of the trunk or timber or tree to which a scion or graft was applied.
- (e) Excrecence over d.

of the Apple only, and that this side is invariably the bigger and better formed.

One of the most interesting facts of the Russian work quoted above, therefore, is that an effective stimulus to the vegetative parts resulting in the production of edible structures similar to those surrounding the core of a normal Pear is produced without the fusion of the reproductive nuclei or their subsequent growth.

It would be of the greatest interest, and it may be of ultimate importance to determine the nature of this stimulus producing the vegetative Pear.

The production of secondary blossoms and from them a second crop of rather small seedless Pears similar to the intermediate type referred to by the Russian workers is by no means rare in Victoria, and a picture is shown herewith of the development of secondary blossoms from the apex of a new lateral of W.B.C. Pear in November. This phenomenon is discussed briefly in "Studies of Growth and Fruit Bud Formation," by Barnard and Read in the "Journal of the

Victorian Department of Agriculture," Vol. XXX., Part IX., September, 1932.



W.B.C. Pear flowering on end of new lateral at Templestowe, Vic., November, 1930.

The production of the truly vegetative fruit described would appear, however, to be very rare, although I believe from the description given that a similar Pear was shown to me by an orchardist in the Gippsland district during a tour of the Better Farming Train a few years ago. If that grower reads this article and remembers the occurrence I should be very glad to hear from him again.

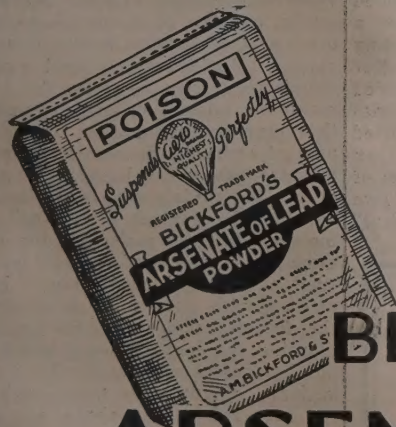
In estimating the value of the vegetative Pear to the fruit industry of Victoria, it should be borne in mind that its chief advantage would lie in its ability to produce a crop even in adverse weather at the time of fruit setting. Now, in Australia our climate is so mild at this time of the year compared with certain parts of Russia and many other countries, that bad weather at blossoming time is not often a major factor in Pear production. It is difficult therefore, to believe that in a measureable time vegetative Pears could with advantage replace our present varieties, which on the whole bear regularly and well, and in most cases have particular qualities fitting them for their present special purposes.



Fig. 6 — Vegetative Pear grafted to crown of a Quince tree (left) and to crown of a dwarf Pear tree (right). Branches without leaves (marked with tags) remain without growth from the middle of April to date (September 28).

The Codlin Moths'

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ARSENATE OF LEAD

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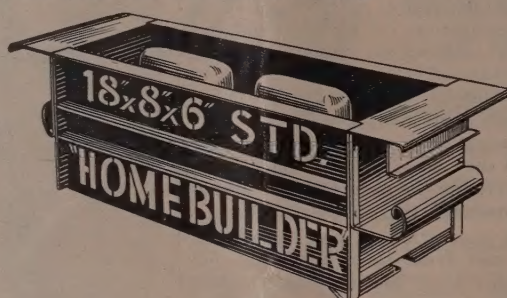
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STANDARD
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CITRUS NEWS & NOTES

RESTRICTIONS ON MOVEMENT OF CITRUS TREES, CITRUS FRUITS, AND SECONDHAND CASES INTO THE MURRAY VALLEY IRRIGATION AREAS FROM OTHER PARTS OF THE STATE.

Attention is directed to the proclamation (dated 21/12/32) concerning entry of trees, plants, fruit, etc., into the Murray Valley of South Australia.

It should be noted that—

1. Citrus trees, buds, cuttings, or fruits may not be introduced into any of the Murray Valley Irrigation Areas between Mypolonga and Renmark, from other parts of the State, unless—

a. Such trees, buds, cuttings or fruits are accompanied by a certificate signed by an Inspector, stating the destination of the trees, buds, cuttings, or fruits, and declaring that the same have been fumigated under Departmental supervision, and are free from Red Scale.

b. Cases or packages containing such trees, fruits, or parts thereof are new, or have been fumigated under supervision of an Inspector.

2. Secondhand boxes, cases, bags, etc., may not be introduced into the aforesaid Murray Irrigation Areas unless they have been fumigated or disinfected at an inspection depot in Adelaide, stamped and forwarded to their destination by rail, and are accompanied by a certificate of disinfection signed by an Inspector.

In addition to the above requirements, citrus trees, citrus fruits, disinfected cases, etc., must, on arrival at their destination in the Murray River Valley, be submitted to an Inspector for further examination before delivery to the consignee.

It is further desired to bring to your attention the fact that any person contravening any provisions of the proclamation and regulations of 21/12/32 is liable to a penalty of not less than £5 nor more than £100, or to imprisonment for any period not exceeding six months.

ORANGES FOR 'FLU.

During a recent influenza epidemic in London, one large firm supplied each employee with two Oranges a day—and insisted upon them eating them on the premises. This latter precaution was not greatly needed for the Oranges were selected ones and it is said that the store reported less 'flu amongst its employees than was reported by many other firms of similar size. Their slogan was "Two Oranges a day keeps the 'flu away!"

ORANGES FOR N.Z.

A correspondent, "Dakota" writing from Wellington, N.Z., points out the value of Australia having a reciprocal arrangement with N.Z., i.e., by Australia receiving N.Z. Potatoes and N.S.W. sending Oranges to the Dominion. Further, that the talk of diseased Potatoes in N.Z. was all so much "hooy."

Restrictions Relaxed.

A relaxation of the restrictions on the importation of Oranges was announced on May 31 by the Acting Minister of Customs (Mr. Fagan), who stated that from the beginning of December, or earlier if necessary, till the end of April, 1938, importers would be free to import any quantity of Oranges from fly-free areas in Australia, subject to the production of certificates required by the Department of Agriculture. During the same period importers would be permitted to import from any fly-free country, such as Jamaica, without restriction as to the quantity.

Mr. Fagan said that New Zealand was under an obligation to ensure that the shipments of Oranges did not clash with shipments from the Cook Islands in order that a satisfactory price might be realised by the growers in New Zealand's island dependencies.

COVER CROPS REDUCE COSTS.

Citrus Growers Cut Down Expenses.

If the Los Angeles Farm Advisor is correct in his figures, Californian citrus growers, who plant cover crops during their Winter, thus save about one-third the cost of artificial fertilisers and lessen the cost of production by approximately £2 per acre. The "Pacific Rural Press" says that it is estimated, on the basis of past experience in citrus orchards of southern California, that about 6,000 pounds per acre of organic matter is needed annually. The average cost of this 6,000 pounds, or three tons in most districts is thirty dollars. The cost of planting a cover crop is only nominal, probably not more than a dollar per acre.

Malva and leguminous crops such as Vetch, Melilotus Indica, and other have been planted during recent years with varying success. More recently, varieties of mustard have been used with successful results in most cases. Mustard has proved a very satisfactory crop to grow for the maximum amount of organic matter that may be produced on a given unit of orchard. Success in growing mustard, however, is based on whether or not the surface soil is fertile and whether the surface of the soil remains sufficiently moist for the germination of the seed. Small seeds such as mustard seed, have been planted with success by making up the furrows after an irrigation and planting the mustard seed broadcast on the surface without further cultivation. Leguminous crops, such as the ones referred to above, are still recommended, provided the grower has had success in growing them. Mustard is not a leguminous crop and therefore does not add any nitrogen to the soil. It may be planted during almost any period of the Autumn or Winter.

WHAT GEAR?

Judge: Now tell me, what gear were you in when you ran over this man.
Lady Driver: Well, I had on black beret, tan shoes, biege stockings and a sports dress of tweed.

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Pruning Fruit Trees

Apples, Pears, Peaches, Nectarines, Plums, Cherries, Apricots. Early Pruning an Advantage

By C. G. Savage and H. Broadfoot, N.S.W. Department of Agriculture.

IT IS SOMETIMES CLAIMED that trees pruned early are more likely to break into blossom if a spell abnormally warm weather follows. However, the results of departmental experiments do not definitely point to this being the case. (So write Messrs. C. G. Savage and H. Broadfoot in the "N.S.W. Agricultural Gazette.") The chief aim when pruning young trees is to develop a strong, well-balanced framework. Excessive unchecked growth has a tendency to weaken the limbs, and if trees are allowed to commence cropping whilst the limbs are too fragile to bear the weight of fruit, results may be disastrous.

To Prune Bearing Trees.

Pruning methods must be varied to suit the different kinds of fruits, and the following paragraphs are given the main points to be observed in the handling of Peaches, Nectarines, Apricots, Plums, Cherries, Apples, Pears, Quinces and Persimmons.

Peaches and Nectarines.

Peaches and Nectarines crop on the previous year's growth, both on laterals and short spurs. The latter are really very short laterals, and are more prevalent on the Nectarine than on the Peach, though some varieties of Peach develop them freely. The important point, however, is that both laterals and spurs are only good for one season; consequently the Peach must constantly be making ample new growth if it is to carry good crops. To obtain this renewal of fruiting wood, the Peach tree must, in the first place, be kept in good vigour, but such can be done by pruning to encourage the renewals in the most convenient places. In some cases the two-year-old laterals will have thrown out side laterals carrying fruit buds, and they can be treated by one of two methods:—

Side Laterals.

(a) The two-year-old lateral may be shortened back, leaving one or more of these sub-, or secondary laterals according to the amount of fruit it is desired to leave on the tree, rusting to the more or less severe shortening of the two-year-old lateral causing fresh laterals to form during the following Spring to supply fruiting wood two years hence.

(b) The two-year-old lateral is shortened less, leaving a greater number of secondary laterals, some of which are shortened to eyes near their base to provide fruiting wood for two years hence, and others being left to carry the coming season's crop. This method is found especially useful in cases (which are not infrequent) where the best fruiting secondary laterals are near the outer extremity of the two-year-old lateral and those near the base are carrying very few fruit buds. These latter

near the base of the old lateral can be stubbed back to provide fruiting wood for two seasons hence, whereas the better fruiting lateral nearer the outer extremity of the old lateral can be preserved to provide the coming season's fruit.

Fruit Spurs.

In some varieties many of the two-year-old laterals will develop very short side growths, crowned with a cluster of fruit buds called a Peach fruit spur. These should be shortened, leaving sufficient spurs to carry the coming season's crop, and the shortening will generally force out fresh laterals that can be used two years hence.

If the two-year-old lateral throws neither secondary laterals nor Peach fruit spurs, but only dormant eyes, it should be shortened hard back to two or three sound dormant eyes closest to the base in order to provide fruiting wood for two seasons hence. If, as sometimes, occurs, the two-year lateral develops neither secondary laterals, spurs nor dormant eyes, it should be removed altogether, being careful not to injure the ring at its base, where it junctions with the main limb. The

Removal of the Lateral

in this way removes an outlet for sap, which encourages the wakening into growth of dormant eyes in the vicinity, sometimes right at the base of old laterals. In vigorous trees, especially in that part of the main limbs closest to the current year leaders, a greater number of primary yearling laterals will be found than is required for the following season's crop.

These should be thinned out by stubbing them back to a couple of sound buds closest to their base, which often causes two laterals to form. At the following season's pruning, one of these is left to provide the coming season's crop and the other is stubbed back to provide new wood.

The length of the yearling laterals that are left should be reduced if the tree is generally a heavy setter and if it carries fruit buds well towards the base of the laterals, but with trees that usually set only a light crop, or those that carry fruit buds only at the tip of the lateral, the yearling laterals should be left longer or not shortened at all.

Apricots.

The Apricot crops on the previous year's growth, and many varieties also on a spur that lasts, or naturally renews itself, for more than one year.

Generally, the Apricot spur does not last like that of the Apple or Pear.

Some varieties under certain conditions, indeed, develop very few spurs, their cropping being chiefly on the previous year's laterals; in such cases the management is similar to that of the Peach.

With the spur-bearing class it is generally necessary to shorten the two-year or older laterals to freshen the spurs they carry nearer the base, and to encourage renewals.

Plums.

European Plums crop mostly on a spur, either direct on the main limbs or on the two-year or older laterals. With many varieties it is preferable to leave the yearling laterals full length to encourage the development of fruit spurs. With others, however, it is better to shorten the yearling lateral slightly. Here again, the spurs on some varieties are only short-lived, and it is necessary to shorten back the two-year-old laterals to help maintain the spurs and effect renewals.

The Japanese Plum crops mostly on both the previous growth and on spurs. It is, generally speaking, an easy tree to manage, as not only do the spurs crop for several years, but they are also easy to renew, as they become spent.

Although the Japanese varieties will generally spur, even if the yearling laterals are cut short, it is preferable, if the trees are making strong growth, to shorten only slightly, as more fruit spurs will then be formed, and there will be less shoots to thin out at the following pruning.

The two-year-old laterals may be shortened, or the yearling extension only removed, to assist in maintaining the spurs and provide for renewals. Any laterals that have run bare of spurs should be removed as described in connection with the removal of spent Peach laterals.

Cherries.

Cherry trees crop on spurs on two-year-old and older wood. On most of the more widely-grown varieties the spur is long lived, but the Early Lyons is a notable exception, and is also difficult to manage in the matter of renewals.

Apples and Pears.

Apples and Pears will often crop on the tip of the yearling shoot, but generally the spur on the two-year-old or older wood is depended on for the crop. The yearling lateral of some varieties of Apples and Pears develops spurs readily if left very long—the Jonathan Apple and Packham's Triumph Pear, for example. In other varieties it will not consistently do so when left long. The Granny Smith Apple, for instance, will often run bare if left long, and will only make a spur or two near the tip, and for this reason it is safer to shorten in the yearling laterals to about 3 inches.

Those that make a fairly strong extension during the next growing season should have a piece of this extension retained at the following pruning, as, if shortened back to the two-year-old wood, there is a risk of the spurs being started into growth. In cases where the extension is only slight, it may be removed by cutting to the cluster of buds at its base, or the lateral may be cut right back to the spurs on the two-year-old wood.

The short shoot of not more than 3 or 4 inches capped with a fruit spur—common on these fruits—should be left uncut in all varieties. It will not only crop, but, if extensions are removed, will keep on renewing its spurs.

The spurs of Apples and Pears are renewed naturally, but if after a time they become weak, the old lateral that is carrying them should be cut back hard to induce a fresh shoot that will develop a fresh set of spurs. Some varieties multiply their spurs till they form a regular cluster and weaken one another; in these cases the clusters should be thinned.

To Prune Rome Beauty.

The yearling lateral of Rome Beauty Apple, except in some of the warm wheat districts, carries a very poorly-formed bud that will not develop spurs unless shortened back to the cluster buds at the base. In strong trees many of the stronger laterals when so shortened will make shoots again, and these should again be shortened back to the cluster buds at the base, but as the growing points of the tree become farther from them, and the flow of sap becomes less as a consequence and is divided up by the duplication of the shoots, they will develop spurs of short fruiting shoots. This result can be hastened by cutting the new shoots back hard during the latter part of the Summer, though such Summer cutting will encourage woolly aphids. Any of the short laterals (6 inches or under) which are capped with a fruit spur may be left untouched, so as to give an immediate crop. This variety will sometimes show some yearling laterals with a plump, well-developed bud that will develop spurs if left longer.

Quinces and Persimmons.

The Quince crops on a shoot that starts that Spring, mostly from a flat looking bud. It is necessary in some cases to lessen the crop by shortening the shoots carrying these buds.

The Persimmon also crops on a shoot that starts that Spring. In this way it may be likened to the Grape. In the hot, dry inland districts it should be cut as little as possible.

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LARGE CROPS OF "EXTRA FANCY" APPLES — "CROWN" PACK INCREASING IN POPULARITY — COOL STORAGE FOR INTERSTATE MARKETS.

WEATHER AND CROPS.

IDEAL HARVESTING CONDITIONS prevailed throughout the greater part of April, and little inconvenience was caused through rain, states Mr. P. H. Thomas, Chief Horticulturist, Tas. Dept. of Agric. Frosty nights and occasional light showers developed color very rapidly and the greater percentage should run to "Extra Fancy" grade, with but little culling. Rainfall records from representative centres, obtained from the Meteorological Bureau are as follow—

Hobart, 96 points as compared with 150 points last April, and an average of 200. Franklin, 227 points, compared with the average of 294, and Launceston, 64 points, compared with the average 224.

As mentioned in last month's notes, the absence of disease and wastage

in this year's crop has increased the marketable fruit by a very considerable proportion. So marked is this that many growers have scarcely touched upon their Scarlets and Sturmers to date, and it would seem possible that a larger proportion than usual of these varieties will fall on the interstate markets. In northern areas too, where the main exports have already been completed, much quality export fruit is still on hand.

Export and Packing.

Much inconvenience was caused during April through a temporary timber shortage owing to the shipping strike in America. During this period half thickness pine lids were used with frequently disastrous results. Cases made of green hardwood timber were also resorted to

and were the cause of much adverse comment. However, the arrival of new supplies towards the end of the month eased the position effectively.

The adoption of the "crown" pack has been general in the north, where fully 90 per cent. of the packing sheds are reported to be putting up a first-class case.

In the south, where the proportion of Canadian type cases being packed for export has now reached over 60 per cent., probably half the sheds have attained a good standard crown pack.

Many growers seem to have a marked objection to putting up a crown pack in the Canadian type case which can be guaranteed 40 lbs. net of fruit on arrival. To do this, 43 lbs. or more of fruit should be contained in the case when packed. Buyers in England who are used to American packing standards look for a visibly well-filled case, and since retailers sell on a weight basis, the producer should make it his aim to cater for these market requirements.

It seems hard to conceive that any grower should voluntarily reduce the appeal and value of his product, by

perhaps a shilling or more, for the sake of, say, a dozen extra Apples per case, yet this is daily being done.

Cool storing

will soon be commencing on a large scale for interstate markets. Charges have been reduced and growers are therefore urged to take advantage of this so that supplies can be more satisfactorily regulated as the season advances. It is needless to stress the desirability of only storing the very highest quality proved interstate varieties. This should not be a difficult matter in the present season with the abundance of "Extra Fancy" fruit available, but it must be remembered that competition will be on a high level, and the aim should be to constantly enhance the reputation of Tasmanian fruit and increase the demand for it in preference to other lines.

Pests and Diseases.

So far this season there has been very little trouble caused through black spot. However, as the rainfall increases, late infections are more likely to follow. Growers should watch out for spot activity, and fresh development on the leaves is generally the first indication that the fruit may be in danger.

The canary fly adults of the second brood can be found almost everywhere now, and whilst little can be done to control them at this period, their prevalence in any particular orchard or district indicates that nicotine sulphate sprays must be incorporated with the calyx or first codling spray next season. Comparatively little damage has been done by the "green grub" (light brown Apple moth caterpillar) this year, but the vigilance of growers should not be relaxed in the matter of sprays in the forthcoming season.

Packing Classes.

School packing classes have already commenced in certain districts, and from present indications not only are the scholars keen but their numbers have been almost doubled when compared with last year. Regular classes will be conducted after the school holidays in May.

Hobart, May 4, 1937.

W.A. REPORTS DRY CONDITIONS

The extraordinary climatic conditions experienced in Western Australia this season, and reported in our April issue, have again been apparent during the latter half of March and April, during which period practically no rain fell in the Apple districts. By the middle of April grasses and clovers which had made a start with the early March rains had practically burnt off, and water was again becoming a serious problem in many parts. The Apple crop naturally suffered, particularly in respect of the growth of the late varieties.

Relief from this condition came about April 18, but was preceded in the Great Southern districts by hailstorm in Mount Barker on the 17th, which is more than a fortnight later than any previous visitation which residents can recall. Fortunately, this was not very extensive but in the majority of orchards struck the loss represented 100 per cent. of the fruit on the trees. This, although disastrous for growers concerned and of consequence in the district, was not nearly so severe as the Bridgetown disaster in March, in respect of which the official estimate of crop losses totals no less than 208,000 cases.

West Australian fruitgrowers will be glad indeed to see a return to the equable climatic conditions for which their State is famed.

Globe Trotter: When I was Europe I saw a bed twenty feet long and ten feet wide.

Stay-at-Home: Sounds like a lot bunk to me.



★ ITS ANALYSIS—2:2:1 Mixture contains:

8¼% NITROGEN (as Sulphate of Ammonia).

8¾% PHOSPHORIC ACID.

10% POTASH.

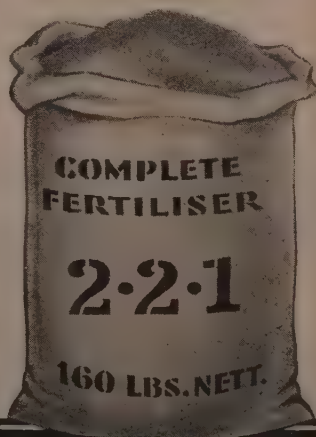
GIVES BALANCE—Because 2:2:1 Mixture is so well balanced it gives greatest profit in terms of highest yield of best quality fruit.

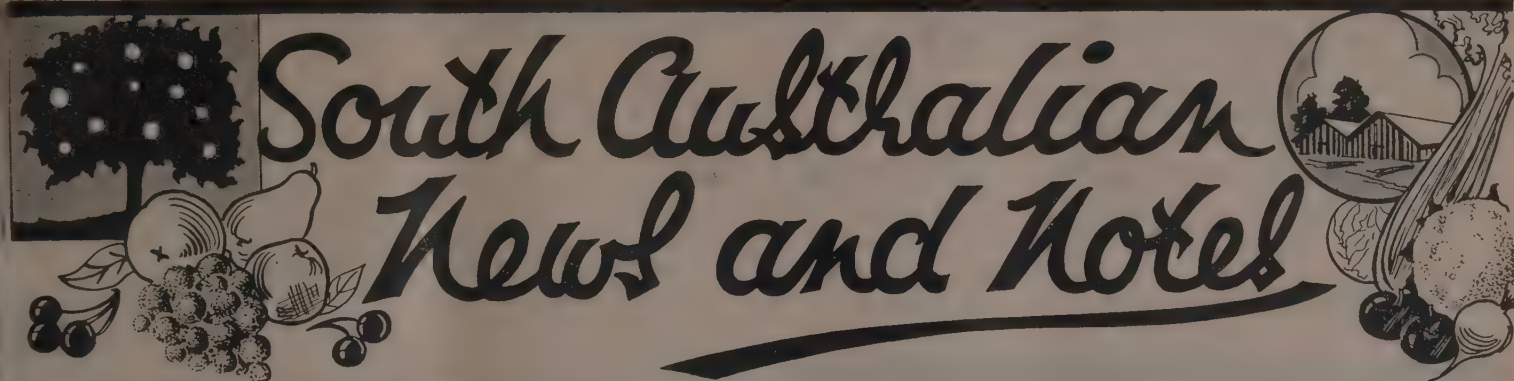
AND ECONOMY—2:2:1 means more plant food in every bag. Compare its price and analysis with any other orchard fertiliser. . . .

ALL FERTILISER DEALERS sell 2:2:1 for Spring application to Fruit, Vegetable and Garden Crops because it's so —

Effective and Economical

H 15/36





INCLUDING OFFICIAL NOTES AND REPORTS FROM THE SOUTH AUSTRALIAN FRUITGROWERS' & MARKET GARDENERS' ASSOCIATION.

EXECUTIVE MEETING

THE monthly meeting of the Executive Committee was held on Friday, May 28, when Mr. T. Hobbs presided and the following members attended:—Messrs. W. L. Ind, H. B. Robson, H. Walker, C. Tidley, J. C. Munchenberg, G. Schultz, C. H. Ragless, A. C. Gibson, W. Giles, G. Jennings, C. J. Pitt, L. A. Cramond, F. Hughes, A. O. Petersen, R. Hunter, G. J. Strange, B. Randall, J. Turner, A. D. Chapman. Apologies received from Messrs. J. Wicks, W. J. Bishop, E. Giles.

Secretary reported having interviewed Mr. Strickland re some steps being taken to fill space caused by removal of fruit for inspection during export operations. The provision of fruit or packing material should be made by grower or agent, and the case should be marked "opened for inspection." It was decided to refer this matter for further consideration by the Fruit Marketing Association.

There was an animated discussion as to the best methods to be adopted to increase consumption of Apples in the State, and reports on the position in other States were read. Mr. Randell stated that an advertising campaign was likely to be started financed by the Federal Government on certain conditions. Growers must not expect to realise good prices for inferior varieties of Apples, and they must remember that in other States

growers are rapidly working their trees over to those varieties which command ready sale and better prices. Members drew attention to the prohibitive cost of sending fruit of any kind to many parts of South Australia, where people were anxious to have it. Mr. Strange reported on the success gained by the Celery growers who levied themselves to pay for an intensive advertising campaign, with consequent great increase in consumption. Apple growers should do likewise, more especially with regard to their own State.

Correspondence re the advisability of taking a census of fruit trees was considered. Some members expressed the opinion that to do so was unnecessary, and entailed considerable work on growers. It was decided to invite Mr. Strickland to address the next meeting of the Executive on this subject. The President informed members of the efforts which had been made to ensure adequate supply of timber for crate and case making, the Woods and Forest Department having been most sympathetic. Mr. Strange, Chairman of the Celery Section reported that a suggestion had been made as to the advisability of securing the return in shooks the large quantity of new crates which are being sent to Melbourne, where they are of very little use as containers for other produce.

The meeting decided to support the Celery Section in every way possible, as it felt that it was a very great mistake to destroy any timber which could be used again to the great benefit of the grower, who was now forced to pay fourpence a crate above former prices, and his produce realising less than usual.

Mr. Strange also reported on the export of Celery now in operation to all the States. Unfortunately, the prices being received were not very satisfactory, one reason for this being the very low prices being received for nearly all other vegetables. President reported that export of Oranges to New Zealand would start next month, and prospects seemed to be very satisfactory.

Important to Exporters of Apples and Pears.

MEMBERS' attention is called to necessity of making application for the Bounty on Apples and Pears exported by them. Application forms may be obtained at the office of the Fruitgrowers' and Market Gardeners' Association.

The following details given in daily press will be read with interest:—

Between 450 and 500 fruitgrowers in South Australia will benefit from the payment of the Commonwealth bounty of 4½d. a case on Apples and Pears exported during the year ended December 31 last.

The State Government has now agreed with the Commonwealth to distribute the money, and the Minister of Agriculture (Mr. Blesing) yesterday announced the appointment of a committee to make the necessary arrangements.

This committee comprises Messrs. G. A. W. Pope (general manager of the Government Produce Department), who is chairman, H. N. Wicks (Bahannah), J. B. Randell (Gumeracha), A. O. Petersen (Upper Sturt), J. Turner (Blackwood), and A. J. Chapman (Nuriootpa), all of whom are growers, and A. G. Strickland (Chief Government Horticultural Adviser).

Mr. Blesing explained that growers were being informed that they were entitled to the bounty whether they exported their own Apples and Pears or sold them in the garden to an exporter who actually shipped the fruit.

A condition of the bounty is that it will not be paid to any grower who does not lodge his claim on or before June 30 next, with the Chairman of the Committee, care of the Government Produce Department, Light Square.

A penalty of up to £500 or imprisonment for two years is provided for any claimant who deliberately makes false statements in his claim.

Application forms and exporters' certificate forms are being sent to all growers whose names are on a certified list in the possession of the committee. Any grower who fails to receive the necessary forms can obtain

NOTICES.

Executive Meeting.

The monthly meeting will be held on Friday, June 25, 1937, at 10.30 a.m.

Business.

1. Further consideration will be given to Government's suggestion that a census of fruit trees be taken.

2. Discussion on methods to be adopted to increase consumption of Apples. Practical suggestions on this important matter welcomed.

3. Reports received from Chairmen of various sections.

N. T. HOBBS, W. J. KIMBER,
President. Secretary.

MARION BRANCH.

The monthly meeting will be held on Wednesday, July 7, 1937, at 7.45 p.m., at Sturt Hall.

The Executive Report will be given, and other business attended to.

I. R. ADAMS, J. R. DUNCAN,
President. Hon. Sec.

IMPORTANT NOTICE.

Members who have not yet paid subscription for year ending August 31, 1937, are asked to send it to Secretary, or pay either Messrs. Collett or Beck at the market.

W. J. KIMBER,
Secretary.

Fruit and Vegetables in S. Aust.

REQUIREMENTS UNDER NEW ACT.

ALL FRUIT MUST BE CASED — NO MORE ORANGES IN BAGS.

STRICT PRECAUTIONS AGAINST RED SCALE.

The Minister of Agriculture for S. Australia (Mr. Blesing) recently stated that he wished to draw the attention of fruitgrowers, merchants and carriers to the requirements of regulations under the Sale of Fruit Acts.

Except where sold direct to a factory and in quantities of not less than 500 lb. weight, it was compulsory that fruit should be conveyed, consigned,

delivered, or sold in standard cases as specified in the regulations. It was thus an offence to convey to market or other place for the purpose of sale, in any vehicle, fruit which was stowed loose, and not contained in cases.

In past citrus seasons, it had been the custom for certain persons to convey by motor truck, Oranges, either in bags or loosely stowed in the truck, from Orange growing centres to Adelaide. This undesirable practice was now illegal.

Special measures were being taken to detect and prosecute persons who committed the offence of bulk carrying fruit.

Red Scale.

Mr. Blesing also said that it was now an offence under the Fruit and Vegetables (Grading) Act regulations to sell, offer, or expose for sale, any Oranges, Lemons, Mandarins, or Grapefruit which were affected by red scale.

Persons who offended against regulations in this regard would, in the case of a first offence, be directed to withdraw the fruit and remove the red scale before re-offering for sale. Persons who committed a second offence would be prosecuted.

Seed Potatoes.

The Fruitgrowers and Market Gardeners' Society Ltd., of 288a Rundle Street, Adelaide, has pleasure in announcing that it has been appointed Selling Agent by PITT BROS. of ASHBOURNE, and would appreciate your enquiries with reference to Seed Potatoes for 1937.

them by applying to the Government Produce Department in Adelaide.

Application by growers must be accompanied by a certificate from exporters who actually shipped their fruit.

More than 500,000 cases of Apples and Pears were shipped overseas from South Australia during 1936, which indicates that S.A. growers will absorb about \$10,000 of the Commonwealth bounty.

MEMBERS!

PLACE YOURSELF IN THE
SAFE HANDS OF THE
F. & M.G. Society Ltd.

We are accredited agents for

GENERAL
ACCIDENT, FIRE AND LIFE
ASSURANCE CORPORATION
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Assets Exceed £15,000,000.

All Types of Insurance.

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Secty., F. & M.G. S. Ltd.

Colloidal Sulphur

Established by field trial and scientific tests as the major recent advance in the control of Fungous Diseases of Vines, Orchard Trees and Vegetables

HOWARD'S COLLOIDAL SULPHUR

is better and cheaper than competitive brands. Pamphlets, prices and details of free test offer from the manufacturers:—

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L. J. WICKS

Freshford Nurseries

Highbury East - South Australia

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The FRESHFORD ORCHARDS comprise 60 Acres of bearing Citrus, Stone Fruits, Pears, Apples, Loquats, Quinces, Walnuts, Almonds, Persimmons, etc.

BUD SELECTION is Easy and Natural under these conditions.

CITRUS TREES all worked on Sweet Orange or Seville Stock

BUDED WALNUTS — The World's Best Commercial Varieties

PEACHES & APRICOTS a Speciality

STANDARD ROSES

CATALOGUE ON APPLICATION.

INSPECTION INVITED.

SOUTH AUSTRALIA (Continued)

CITRUS GROWERS' MEETING

A MEETING of the Torrens Valley and Salisbury citrus growers was held at Salisbury on May 28, when Mr. R. Moss presided, and expressed pleasure at the very representative attendance of growers. A special welcome was given to Messrs. Wishart and Medley, of the Murray Citrus Association, with which the Adelaide Plains growers are working so harmoniously, especially in export connected with England and New Zealand.

The following were elected officers for the coming year:—

President, Mr. A. W. G. Pitt; Vice-President, Mr. S. H. Davis; Committee, Three members from Salisbury and three from Torrens Valley; Hon. Secretary, Mr. W. J. Kimber.

Mr. Wishart expressed pleasure at being able to attend and note the spirit of co-operation which was so evident. The objective of the three Associations was the same, cutting down costs of production and distribution, and at same time to provide the public with a first-class article at a reasonable cost. Messrs. Mueller and Underwood were doing splendid work in New Zealand and England, and the methods adopted in sending citrus to England have greatly improved, eliminating many of the causes of damage.

It is pleasing to know that an increased quantity is desired by New Zealand this season. It must be apparent to all that every care should be taken to see that these two export markets are supplied with only the very best, so that they can be retained and increased. Details were given re the formation of S.A. Citrus Board, and also the Federal Advisory Committee, which should result in stabilisation of the Citrus industry. He thought that more attention should be given to regulation and control of prices in Adelaide markets.

Mr. J. Medley, Secretary of Murray River Citrus Association, read many interesting extracts from Mr. Mueller's report on marketing in N.Z. Growers were pleased to hear that portions of the report are likely to be circulated for their information. The export to New Zealand was 138,000

cases last season, and was likely to be greater this. The New Zealand Government was assisting growers on the Cook Islands to improve their cultural and transport methods, which is only natural.

Mr. Medley spoke of the timber shortage and increased cost of boxes. Growers can rest assured that every effort is being made to get sufficient supplies. Mr. Medley thought that the method of distribution adopted by Mr. Mueller in New Zealand was quite fair, and difficult to improve.

The matter of representation on the Citrus Council was discussed as local growers thought that they should be directly represented. Mr. Metters explained fully the objects of the Council and business done at a recent meeting. Both the State and Federal Governments stipulated that such a Council be formed, thus enabling them to confer with a properly constituted body when necessary, and not with a large number of individual associations with consequent diversity of interests and opinions! The speakers answered many questions and thus much useful information was obtained.

Mr. Hobbs complimented the Murray Citrus Association on the work it had done, and moved:—

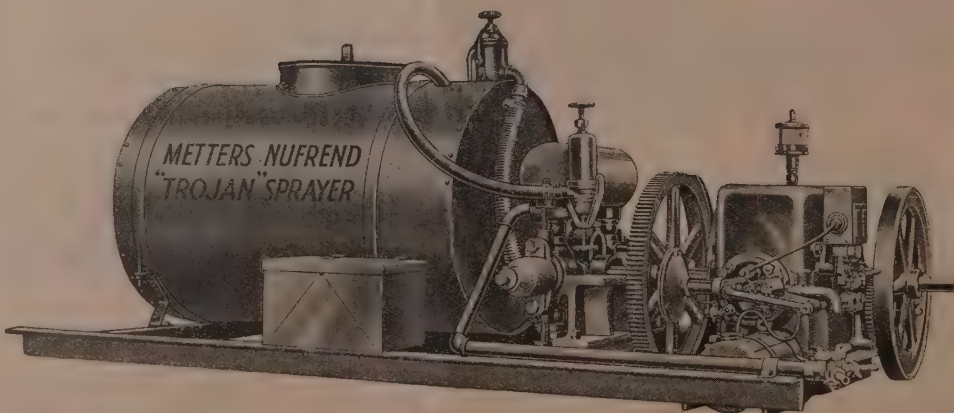
"That a S.A. Citrus Board be formed on lines suggested by Murray Citrus Association," seconded by Mr. L. J. Wicks, and carried.

Mr. E. Moss spoke of the detrimental effect the sale of immature citrus fruit had on the market. The question is a difficult one to deal with, but will nevertheless receive attention.

The Secretary read correspondence which had passed in reference to a request that certain regulations in the Food and Drugs Acts should be altered to allow aerated water manufacturers to make citrus drinks in such a way as to ensure a greater consumption of citrus fruits, to the benefit of growers. After some discussion it was decided to leave this matter for the S.A. Citrus Board to deal with.

Refreshments were partaken of and votes of thanks to speaker closed a very interesting meeting.

Metters' Nufrend "Trojan" Power ... Sprayer



Specifications:—2-h.p. petrol engine, speed 500 r.p.m., direct coupled to Nufrend Spray Pump. Galvanised Vat of 50 gallons (approximate capacity), fitted with rotary agitator, mounted on a welded steel frame. The plant is equipped with a Metters Automatic relief valve, suction pot with removable strainer, double cock, 2-25-ft. lengths of ½-in. special spray hose, directors and nozzles. The pressure may be regulated and set as required up to 250 lb.

Capacity:—Pump is capable of delivering 240 gallons of mixture per hour at a pressure of 200 lbs.

Weight:—6 cwt.

Manufactured by ...

PRICE £75

METTERS LIMITED, 124 Rundle Street, Adelaide

ADDRESS GIVEN BY MR. RON OSS, PRESIDENT OF COMBINED TRUS GROWERS' ASSOCIATION AT SALISBURY, MAY 28, 1937.

T gives me great pleasure to welcome such a large number of citrus growers to our meeting. We are especially pleased to see Messrs. Wishart and Medley, President and Secretary respectively of the Murray Citrus Association. We have many matters of interest to occupy our time to-night.

The marketing of the citrus crop last season was generally satisfactory. This state of affairs was due, we all are aware, to the favorable export position we now enjoy, and serves to demonstrate how closely conditions of the home market are dependent on the export trade, without which a state of affairs on local markets would be chaotic, and would all for very deep thinking to overcome. As it is, whilst our attention is mainly centred on the export trade, the local market is left more or less to look after itself. Whether this is a wise policy is a debatable point, but one which is hard to overcome, whilst the call keeps coming from New Zealand for more and more oranges.

Prices were discussed from time to time, but as far as fixing prices was concerned, very little could be done. In the early part of the season, when prices tend to be low when a fixed price is desirable, but it seems impossible of attainment later in the season, when supplies are shorter and prices naturally rise. In addition is the fact that nearly all the fruit received is second grade or lower, which also complicates the position. Last August a conference was held in Adelaide and attended by delegates from all States. The outcome of the conference was the formation of a Citrus Advisory Council which should serve a useful purpose in many ways to the benefit of the industry generally. I would also like to mention the work the C.S.I.R. is doing for the industry by the practical nature of its experiments, which cover a very wide field. As yet many of them are incomplete, but when finished should be of inestimable value. One of the reports issued during the year I consider of great value, that is, the one on "Mould in Citrus Fruit and its Control," which by its very practicable suggestions should commend itself to all.

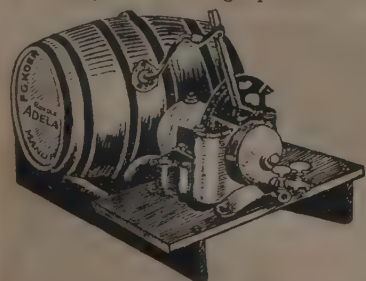
Finally, I trust you will all have a pleasant and interesting time to-night, and that the coming season will prove to be a prosperous one for all.

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"Everlasting" Sprayer

No more corrosion or washer troubles. Always an even high pressure.



Made in one solid gunmetal casting and supplied with 40 or 60 gal. cask or copper tank.

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Rocks and Soils

LECTURE BY MR. A. G. EDQUIST, INSPECTOR OF SCHOOLS.

[As many of our members were unable to attend the second of the quarterly educational lectures on May 19, and the subject is of such interest to all growers, Mr. Edquist has kindly supplied a short résumé, for which we are thankful.

Mr. N. T. Hobbs, President of the Association, welcomed Mr. Edquist, and commended him for the excellent work he had done in the schools of the State, particularly in the supervision of "The Home Project Clubs." Here follows résumé.]

Mr. Chairman and Gentlemen.—When your Secretary, Mr. W. J. Kimber, asked me if I would deliver an address to the members of this Society, he suggested that I should choose the subject of my talk. Bearing in mind that you are mainly interested in primary production, I chose the subject of "Rocks and Soils—Their Origin and Mineral Content."

To illustrate my text I have brought before you a selected collection of rocks and soils derived from these rocks. The soils they form are characteristic of the soils which you are working and from which you are producing vegetables and fruits that have made a name for South Australia all over the Commonwealth. In producing the wonderful Celery and fruit which is exported abroad, you are aiding nature to convert minerals, derived from rocks and fertilisers, water, and carbon from the carbon dioxide of the air into valuable vegetable foods, and also those strange factors for health known as vitamins. You are knowingly and intelligently helping plants to change soil contents into valuable foods. This oldest and honorable occupation is fundamental to the health and progress of any nation, whether it be young or old, and success is ultimately due not only to industry on your part, but also to a clear understanding of the reasons for everything you do. The day, when working by rule of thumb is sufficient, is gone, and to-day each gardener must be a student of the science of agriculture and in small measure an experimenter with crops, soils and soil amendments.

An examination of the rocks on this table reveals a piece of real lava, which at one time formed part of the intensely hot molten rock at the bottom of the crater of Mount Gambier. The heat is gone and the crater now holds beautiful lakes of fresh water, cold lava, and derived soils, upon which grow bracken fern and pasture. Lava and this rock known as basalt, form on decomposition a clay soil containing iron, lime, soda, magnesia and silica in abundance, also traces of other minerals used by plants as food. These samples of granite also weather into clay and sandy soils containing much silica, potash, soda, lime, magnesia, etc.

Here is a sparkling rock which when rubbed, leaves tiny flakes of mica on the fingers. That mica-laden rock is known as mica schist, and on decomposition makes a strong loam relatively rich in clay, sand or silica iron, potash and traces of soda, manganese, magnesia and phosphates.

This striped specimen is a piece of banded shale and this a sample of slate from Willunga. Both these, and also this soft mudstone, are made from ancient muds laid down in some primeval sea which occupied the present sight of these rocks hundreds of millions of years ago. The dark grey color is due to the action of iron on decaying vegetation which

grew in the ancient sea. The red color in this mudstone is due to iron rust or iron oxide. Iron oxide is nature's universal paint. It not only colors rocks and soils, but it also imparts color to flowers, leaves and fruits.

In soils in which iron is deficient the foliage of plants is often pale instead of dark green, and the fruits are lacking in color. The soils derived from rotting shales, slates and mudstones are usually of a strong character, well supplied with mineral plant foods, are retentive of moisture, and also of fertilisers which may be added from time to time. Potash, lime, iron, manganese, magnesia, sulphur, soda, chlorine and traces of iodine and phosphates are also present, and when more superphosphate of lime and sulphate of ammonia are added, these rocks furnish the best soils in which to grow vegetables and fruits.

In this group we have limestone, fossiliferous sand stone and marble. All these give rise to soils of a porous nature, rich in lime. Marls are formed from these rocks, so also are calcareous sandstones and loams.

These soils require such amendments as nitrogen and usually phosphates, in fact, all our soils are more or less deficient in phosphates. From this fossiliferous sandstone, and also from quartz rock, such as you see here, sandy soil is made, the shelly matter producing the limestone which is so frequently associated with our sandy soils.

Now we come to an entirely different type of soil, which is known as peat. It is mostly the remains of rotted vegetation which abounded in

a swampy area in which this class of soil is formed. Here is another type of peaty soil formed from decaying grass and leaves made artificially in the compost pit in the garden. It is leaf mould, and resembles peat.

Having reviewed the rocks and derived soils, let us consider the part played by each mineral plant food in the economy of the plant. Silica, or quartz, as it is called, lends strength to woody tissues and glazes stems of plants such as bamboos, reeds, oats, wheat, barley, maize and other cereals. Alumina, which when chemically combined with silica forms clay, acts as a holder of the more soluble plant foods such as potash, lime, soda, magnesia, manganese and phosphates. Potash and soda both help in the production by the plant of sugar and starch. Any plant such as the Potato and cereals which are noted producers of starch require both potash and soda in quantities. Sometimes one will hear it said that potash is not required in our soils because they are loaded with soda, but this is not true. Potash may depress the rate of growth of crops at times, but it certainly adds to the keeping quality of both vegetables and fruits and also helps on growth in localities such as deep gullies, where sunlight falls upon the crops for a short period of the day. If it is placed in the soil by applying sulphate of potash, both trees and smaller plants will make good use of it and to advantage, even though the weight of produce is not materially enhanced. Only small dressings are required.

Lime hardens plant tissues, is a constant food for all sorts of crops, helps plants to resist certain diseases, and liberates potash from potash minerals which do not readily dissolve when lime is not present. Magnesia helps in the formation of leaf green coloring matter, and without this leaf green, or chlorophyll, plants cannot secure carbon from the air and

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In All Varieties, Specially Raised and Cultivated for the Needs of the Orchardist.

RELIABLE ALMOND TREES...
Best Commercial Varieties.

ROSES, PLANTS AND SHRUBS
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MONOHYDRATED COPPER SULPHATE for Celery, Tomato and Potato Blight.

BORDEAUX POWDER for Spraying. Save the bother of mixing Bordeaux Mixture.

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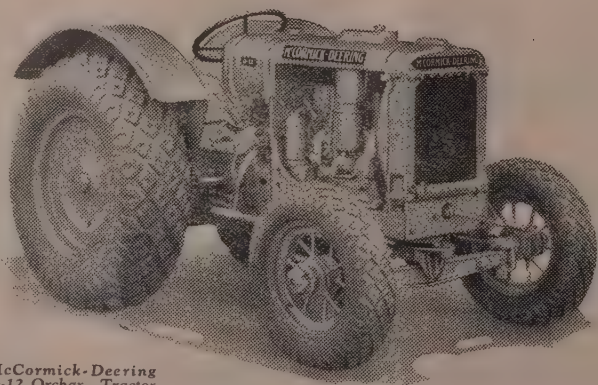
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Balhannah Nurseries, Balhannah, S.A.

Cut Down Your Orchard Toil with a

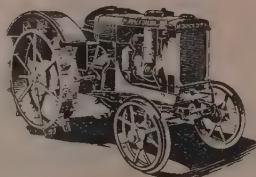


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O-12 Orchard Tractor

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PLOUGHING, harrowing, cultivating, carting . . . your time is never your own unless you've got a tractor.

Invest in a McCormick-Deering pneumatic-tyred O-12 tractor... Expressly built for fruitgrowers, the sturdy, nimble little O-12 operates on low-cost kerosene, makes all kinds of field work easier, supplies plenty of power for power take-off and belt jobs. Write to us for catalogue or see your McCormick-Deering agent.



THIS is the popular McCormick-Deering W-12 tractor equipped with steel wheels. W-12 does good work under varied conditions. Sturdy, compact, easy to handle. Full particulars will be furnished on request.

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change it into sugar and starch. Iron helps to give to foliage, flowers and fruits their many bright colors. Sulphur is a tonic, and with lime, helps plants to resist certain fungoid diseases. Such crops as Peas and Beans make great use of sulphur, so also do Cabbages, Cauliflowers and other members of the Cabbage tribe. Phosphates are required by all plants.

Phosphate of lime helps to stimulate root growth and to set seeds. Sometimes kernels in stones of stone fruits fail to develop because of a deficiency of phosphorus. Without it buds are poorly formed. Super. is needed in all soils if we are to grow the best crops, whether in garden or field. Manganese is required by all plants in very small quantities. It helps in the formation of plant perfumes and flavors, is a preventive of disease, and without it oats are not able to thrive. One fine piece of research done at Waite Research Institute was to show farmers that the failure of oat crops in parts of South Australia was due to a manganese deficiency in the soil. It is also true that traces of other minerals, such as chlorine, fluorine, and iodine are essential to healthy plant life.

As a rule, these are in the soils of marine origin in South Australia, in adequate quantities.

Nitrogen is of great importance as a mineral plant food, as it helps to form succulent tissues in vegetables and fruits. All crops benefit by the liberal use of manures containing nitrogen. Sulphate of ammonia, nitrate of soda or of potash, nitrate of lime, organic manures, and some specially compounded manures contain nitrogen. It is of great importance in the production of Celery, Lettuce, Cabbage, Cauliflowers, Spinach, Peas and Beans of all varieties.

Finally we come to a strange substance in soil without which no amount of artificial fertilisers can

give good results when added to the soil. This substance is known as vegetable glue or humus. It is the last product derived from decaying organic matter in the soil. Without it mineral fertilisers lose their potency. To get the best crops, organic manures must be added to the soil regularly. Green crops ploughed under supply it. Stable, cowyard, sheep and pig manure produce it in the soil. Offal from slaughter yards in the shape of sheep's trotters, blood manure, bone manure produces humus and much may be obtained from peat, leaf mould and wood heap refuse. Humus slowly oxidises away as soils are cultivated and cropped. Probably the cheapest way of maintaining it in the soil is to use green manure extensively. Pea haulm, vetches and green Bean stalks are specially useful as a source of humus and also of nitrogen which is stored up by soil bacteria in tiny nodules on the roots of these plants.

In conclusion, I must suggest that every gardener, no matter how busy should do some experimentation on small scale, and should the results prove pleasing, to try out the same procedure on a larger scale. Of course, the deciding factor in all manurial processes is cost and return in L.S.D.

SOUTH AUSTRALIAN FRUIT MARKETING ASSOCIATION.

At the monthly meeting of the Executive of the S.A.F.M.A., held at Adelaide on May 28, Mr. H. J. Bishop presiding, it was decided to ask the State Government to go ahead with its proposed census of fruit trees. It was estimated that the total crops of merchantable Apples in S.A. this season was 750,000 cases, of which 400,000 cases were available at the present time.

The research committee was asked to report as to the value of Willie Sharp as an export Apple.



Feeding Your Fruit

A complete fertiliser—Nitrogen, Phosphate and POTASH — is the only commonsense means of replacing the plant food removed by your trees. Even if the crop fails the tree has drawn on plant-food reserves.

If fruit-spur or terminal growth is short, if the bark is tight, the fruit under-size or under-coloured, if "Die-back" or "Rosette" appears on the terminals, if leaves are pallid, limp or scorched on the margins—then the trees are under-fed with humus or fertiliser or both.

Full grown trees need 10 lbs. of 2:2:1 (W.A. "Special K"). Smaller or extra large trees, need proportionately less or more — but it must be a rich, balanced mixture.

For advice on general orchard problems write to:—

PACIFIC POTASH LIMITED

Research Service, Box 3843T, G.P.O.,
Scottish House, 19 Bridge Street, Sydney



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South Australia

Mid-Murray Notes

COVER CROPS INCREASE YIELD BUT AFFECT BAUME DENSITY OF
FIELD — DRIED FRUIT TONNAGE ABOVE AVERAGE THIS YEAR —
CODLIN MOTH PARASITE.

By Our Correspondent.

Renmark, May, 1937.

THE VINES AND TREES in this area are fast assuming their Autumnal tints, and in the absence of frosts, are still holding their leaves.

Cover crops are growing wonderfully well during the mild weather since they were planted. Just at a time when a prolonged dry spell somewhat checked the growth, we had a fall of 65 points of welcome rain, since which the growth has been rapid.

Following the general practice of planting yearly cover crops, the increased crops leave no doubt that this practice has proved its value, and no grower who has increased his crops this means is likely to revert to the old practice of attempting to grow decent crops by the use of artificial fertilisers alone.

Since the growing of cover crops has become a general practice, many interesting diversions have been made individual growers to meet special circumstances. This has been particularly noticed among the Gordo and Doradillo growers, who were reluctant to plant cover crops before ploughing was finished, a practice which invariably led to late planting and consequently late maturing, often adding to a cover crop maturing so late as to compete with the vine for moisture in early Spring.

This factor, combined with the danger of frost damage through having a cover crop growing while the vine shoots are in a tender condition, has led to an accepted March special irrigation for the purpose of planting cover crops. This date allows the seed to germinate rapidly and forge ahead during the warm days that follow, so that the Beans are sufficiently strong to withstand an attack of aphid, which inevitably follows during the Winter or early Spring months. Late planted Beans struggle long through the Winter, and are generally ruined by aphid, so that it is necessary to plant Beans early.

Where it has been impossible to plant Beans in March, it is best to substitute Field Peas, as these have proved themselves more drought-resistant, and do not suffer from attacks of aphid to the extent that Beans are liable. Peas are also able to stand up to more severe frosts than Beans, and are therefore better Winter growers. Beans, however, give a much greater bulk of organic matter and nitrogen, and that is the

reason why Beans have almost totally replaced Peas as a cover crop except in exceptional cases.

One grower planted Peas in late February, and they are now almost ready to plough under, but the growth can hardly be called entirely satisfactory; there is this one point in favor of getting a cover crop in as early as possible, and the fact that early ploughing in of a cover crop allows a long period for nitrification and humification, but I consider February planting as too risky.

Although cover crops have increased our crops, it has developed another problem. These increased crops have produced fruit of a lower Baumé density than in the years prior to the practice of green manuring, while it is possible to produce a light colored Sultana with a relatively low Baumé, although the color keeping quality of this fruit is inferior to fruit of a higher Baumé.

Currents, on the other hand, need a high Baumé fruit to produce a high grade article, while up to the present the higher crops have been economically sound, there may come a day when we will have to consider limiting the crops to the capabilities of a vine to produce only high grade fruit, unless we can find some way of increasing the Baumé in a big crop.

Many theories have been advanced to overcome this difficulty. It has been pointed out by Mr. C. Wiedenhofer that in his opinion the low Baumés are due to an increase of nitrates, both artificial and organic.

The Organic Nitrogen

produced by a good cover crop may be as high as the equivalent of 6 cwt. of commercial sulphate of ammonia per acre, and this quantity of nitrates does not seem to have been adequately balanced with phosphates and potash. There are many factors which have a bearing on the matter. I have found a variation of two degrees Baumé in the fruit taken from the same vine, the higher density coming from the more exposed part of the vine, the fruit having access to the full value of all the available sunshine, while the lower density fruit came from the shaded portion of the vine, close to the ground.

This fact points to a revision of our trellising arrangements, and there has already been a system in use whereby extra foliage wires have been added to the usual trellis. These wires swing loose and do not come into action until the foliage has

reached a stage liable to shade the fruit, it is then lifted up and kept in position by a hook in each trellis post, thus allowing air and light to pass freely through the fruit. Whether we can lift the Baumé of our fruit by this means, or by an increase of phosphates and potash still awaits solution.

It is notable that a medium vine with a medium crop will invariably give a good Baumé, so that we may find, in the course of time, that each vine has only a limited ability to produce a high Baumé, beyond which it is not possible to go.

The problem of how to produce a big crop of high Baumé fruit has created a great deal of interest in this area, and has led to a considerable discussion in the past few months.

A factor which cannot be overlooked is the difference in Baumé density of Doradillos in different soils. The Renmark soils are of a stiffer nature than the Berri soils, and the Berri fruit, although producing fairly large crops are almost without exception of a higher Baumé density.

Doradillo crops are exceptionally heavy this year, and have proved from 20 to 50 per cent. higher than was estimated. This has led to a rush of fruit to the distilleries in the district, necessitating several shifts per day and night being worked at the Renmark Growers' Co-op. Distillery to cope with the deliveries.

Now that all dried fruits have been delivered to the packing houses, it is shown that in spite of Spring frosts and February rains, both of which have accounted for a fair amount of loss, this year's production of dried fruits will be well above the average yearly output.

Citrus fruits are coloring rapidly in the majority of blocks, and there are many localities producing early maturing fruit; this has already been picked, packed, and put on the market.

Codlin Moth Parasite.

I was very interested in the letter from K. W. Scott, of Croydon, in the April issue regarding the parasite on Codlin larvae in the form of an Ichneumon Wasp, for it is a new one to me.

There are evidently many kinds of the Ichneumon variety which work on the Codlin larva. One of our observant growers in Renmark identified another wasp of the same species seeking out the young grubs. This wasp, however, has a different coloring, to that described by Mr. Scott, and for the

sake of a better name, I would call it a "community" wasp. They breed in communities, under the bark of trellis posts, or in any protective harborage, such as bags hung over a wire fence, etc.

The activities of the Codlin's natural enemy may account for the unexplainable reason of an occasional small brood, following a year of exceptionally heavy infestation. Although there are many enemies at work on the Codlin grub, and on the egg, no permanent improvement is as yet evident, from year to year, in lessening the Codlin trouble.

During harvesting operations is the time when weed growth usually makes great headway; this year was no exception, and in a very short time, what is known locally as "Fat Hen" grew rapidly, with the result that everybody is now busy hoeing them out. The usual procedure when this weed is thick is to rake them out with a buck rake and later burned. This, I think, is a mistake, and if allowed to remain in the rows and rotary hoed, the organic matter thus incorporated with the soil would prove a valuable asset.

Dried Fruit Prosecutions.

The action taken recently by the Victorian Government against growers for breaches of the State Dried Fruits Act has led to a conviction with a substantial fine. This news has come as a welcome assurance that the State Acts at least are watertight, and have now stood the acid test of legal argument. Much interest centred around these cases, for over 90 per cent. of growers of dried fruits are in favor of the orderly marketing, and another spanner in the works of the Act would have caused considerable confusion and dislocation in the industry.

Unlike the attack on Section 92 of the Commonwealth Constitution, this prosecution was laid under Regulation 22, which provided for the protection of producers in the event of the prosecution having failed. I cannot see any logical reason for supposing that any State legislation enacted for the protection of its citizens would be effective.

This case was in the nature of a test case of the utmost importance, and it is therefore extremely satisfactory to know that there now exists that measure of protection granted to its subjects by State Acts.

"NEMO."

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WILL WORK AT ANY
DEPTH UP TO 12
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Protective Foods

FRUIT IS EMPHASISED ON NATIONAL POSTER.

Appreciated Enterprise by Victorian Railways Department.

AUSTRALIAN PRODUCERS have always appreciated the enterprise of Mr. H. W. Clapp, Chairman of the Victorian Railway Commissioners, in his national activities, and in particular for his very effective publicity on behalf of the fruit industry.

This helpful publicity has been of great value. All sections of the

fruit industry have been included. Not only have posters been prominently displayed on railway stations but many hundreds of thousands of valuable recipes have been distributed.

In addition to this publicity work the Railway Department has provided facilities for the public to obtain high quality fruit at reasonable prices, and has also provided valued leadership in the development of the pure fruit drink trade.

Recently the Department issued a "protective food" poster, which has won great appreciation because of its educational value. A copy of this "Protective Food" poster was sent to London and the Victorian Railway Department is now in receipt of a letter from Mr. F. L. McDougall, a member of the High Commissioner's staff in London, in regard to the "Protective Food" poster being given

pride of place at the meeting in Geneva of the International Committee on Nutrition.

The distinction achieved by this poster is all the more gratifying for the reason that besides its valuable dietetic purpose there is the national advertisement for Australian products.

The "Protective Food" poster displays in large type the words "Be Fit—Include in Your Daily Diet These Protective Foods," then, in smaller type, the diet is named:—"1 pint milk, 1 egg, 1 Potato and two other vegetables (one of these a green leafy one), 2 servings of fruit (at least one raw), 1 serving of meat or fish, 1 ounce of butter."

This diet is illustrated by sketches of 1 pint bottle of milk, 1 Potato, 1 egg, 1 Carrot, 1 Lettuce, 1 Apple, 1 Orange, 1 chop, and one ounce of butter, which stand out very clearly and strikingly against the black background.

POWER.

Father: "How are you getting along in school, Jimmy?"

Jimmy: "Fine! We're learning words of four cylinders now."

Banana Bunchy Top in Queensland

Spread of Disease Alarms Growers.

THE BIG INCREASE in the number of bunchy top diseased plants—particularly in South Coast districts—forms the subject of a special report by the Director of Fruit Culture to the Minister for Agriculture. The seriousness of the position had alarmed growers. Bunchy top had shown up rapidly since the recent rains.

Despite the efforts of Departmental Inspectors to keep the disease in check it was regretted that some growers were very lax in their treatment of diseased plants.

The Minister for Agriculture (Hon. F. A. Cooper) announced that the regulations would be tightened up. Growers should note that it was necessary to kerosene and destroy not only diseased Banana plants, but also those plants vegetatively connected with diseased plants. Action would be taken against those who continued to show negligence in this matter.

BANANA RIPENING.

Investigator States Improved Method Needed at Sydney Markets.

THAT IMPROVEMENTS are urgently needed in Banana ripening methods at the Sydney markets was a statement recently made by Mr. C. J. Magee, Plant Pathologist, N.S.W. Dept. of Agriculture, who at the request of the N.S.W. Banana Marketing Board has been investigating Banana ripening methods in the Sydney markets.

It had been ascertained stated Mr. Magee that the most satisfactory ripening temperatures for Cavendish Bananas were 68-70 deg. F. in Summer and 66 deg. F. in Winter. The relative humidity was also of importance and should be under control. In the Banana ripening rooms at the Sydney markets the needed facilities for temperature and humidity control were generally lacking. Tests showed that on the average Bananas were ripened at too high a temperature, thus reducing the quality and adding to wastage.

Attention was being paid, concluded Mr. Magee, to the means for correcting this serious position.

THE ANCIENT APPLE.

The Editor acknowledges with pleasure the receipt of a letter from Mr. Eric Shoobridge, of Bridgewater, Tasmania, enclosing an extract sent him taken from an English paper.

"The Ancient Apple."—It is good to realise, when you are enjoying your apple, that like yourself it has an ancestry, and like your country a history.

Mr. H. V. Taylor, horticultural commissioner to the Ministry of Agriculture, has just written a guide book "The Apples of England" in which it shows that while some of our Apples could trace their parentage to Apples introduced during the Roman occupation England in turn has given Apples to the whole World.

There really was a Mr. Cox, a retired brewer, living near Slough, who raised the first Cox's Orange Pippin in his garden a century ago and an obscure Mr. Bramley grew the first Bramley seedling.

The Pearmain from which the famous Worcester Pearmain derives its name, goes back to 1204. The Devon Quarrenden, mentioned in 1684 is still listed by most firms. A mechanic raised the first Chelmsford Wonder and the Scarlet Nonpareil was found growing in the garden of a public house at Esher. The world's stock of the famous Blenheim Orange was represented in 1818 by one tiny tree at Woodstock.

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Apart from being the most efficient winter-spraying oil, SHELL P.C.S. is also the lowest-priced. Obtain full particulars of SHELL P.C.S., SHELL RED SPRAY and SHELLICIDE "D"—without delay—from The Shell Company of Australia Limited.

PRODUCT OF THE SHELL COMPANY OF AUSTRALIA LTD.

Commercial Fertilisers for Grapes

Results of 25 Years Tests in U.S.A.

Interesting Conclusions from the Use of Nitrogen, Phosphorus Potassium and Lime.

FERTILISERS FOR GRAPES have been under test for 25 years by the New York Agricultural Experiment Station, Geneva, N.Y., U.S.A. Full details are given by Mr. F. E. Ladwin, Associate in Research (Pomology) in one of the Station's bulletins just to hand.

In 1909 the New York Experiment Station began testing the three principal elements of plant food—nitrogen, phosphorus, and potassium—their relationships to Concord grape production, on a farm of 30 acres leased for a long term in the part of the Chautauqua and Lake Erie Grape Belt. Approximately one-half of this farm was already planted to grapes when the experiment was begun. Three distinct soil types are represented in the area, viz., Dunkirk gravelly loam, Dunkirk silt loam, and Dunkirk shale loam. The experiment is located on the first-named soil.

The vineyard under test had the same care that commercial vineyards in the region received. A casual examination fails to distinguish the acreage from the many thousands that are under cultivation all about it.

In the bulletin the effects of the fertilisers are considered first in their relationship to fruit yield and fruit quality; second in relation to the production of cane and leaf; third, from the economic standpoint.

The Soil.

Approximately a third of the vineyards in the Lake Erie Valley are on soils similar to that on which this experiment was conducted, Dunkirk gravelly loam. There are many gradations of this soil type ranging from very fine gravel to very coarse. This soil type is considered the best for grapes, probably because of its excellent natural drainage and because it admits of tillage within a few hours after the heaviest rains. Thus, weed control can be more easily and quickly accomplished than

in the vineyards on heavier soil types, consequently vineyards on Dunkirk gravelly loam are cultivated more often each season. Frequency of cultivation, coupled with an insufficient supply of farm manures and the infrequent use of green manures, undoubtedly has reduced the humus content of the soil generally to a point far below the optimum requirements. This destruction of humus has progressed over a great many years, and its restoration to a point where commercial fertilisers will be most effective will require as long or possibly a longer period. Each season some kind of green manure has been returned to the soil in this test vineyard, the check plot included.

Summary.

Nitrogen is nitrate of soda, phosphoric acid in the form of superphosphate, and potash carried in muriate and sulphate of potash have been applied annually for the 25 years to certain plots in the block of about 1,700 Concord Grape vines. The nitrate was applied at the rate of 250 pounds per acre, the superphosphate at 300 pounds, and the muriate or sulphate of potash at 200 pounds.

Of the three plant foods, nitrogen produced more and better fruit and more cane and leaf growth. Potash in combination with nitrogen and phosphoric acid has apparently increased the yield of fruit and wood. Phosphoric acid has been of doubtful value, although it has markedly improved the growth of the green manure crops grown in this vineyard.

Lime has apparently depressed the yield of both fruit and wood.

All combinations of nitrogen, phosphoric acid, and potash have been highly profitable for the 25-year period, although the real gains have come from the nitrogen and potash, whatever the combination.

Chemical analyses of the soil showed an abundance of potassium, but a

Protection of Trees from Wood Rot

Preventive and Curative Measures

MANY OF THE DISEASES to which fruit trees (and shade trees) are subject result in some form of wood rot or decay. The bark of a tree is a natural barrier, as long as it remains unbroken, to turn aside the fungi which would enter and destroy the heart of the tree, but this protecting covering is often damaged during pruning operations (as by the removal of a limb), by cultivating implements, or by boring insects, and eventually it is destroyed by parasitic fungi, and a hollow in the tree is the result.

There are two objects in protecting exposed surfaces, which is best done by the use of paint or tar, states the N.S.W. Dept. of Agric.; first to prevent the infection of the surface by fungous spores, and second, to prevent checking and cracking of the surface which would permit the entrance of water, thus aiding decay. A

few moments' work at the right time may save expense later on and prevent considerable damage to the tree. When, however, protective measures have not been taken, the treatment must be curative rather than preventive, if the profitable life of the tree is to be spared.

In the case of a tree which has been neglected, say after the removal of a large limb, the first task is to remove all the diseased wood; a chisel and mallet are the handiest tools for the job.

After the wood is removed down to white, healthy tissue, the whole surface should be disinfected with some wood preservative such as mercuric cyanide.

If the cavity is not filled immediately it is advisable to paint the exposed surface with shellac or grafting wax, which will prevent the wood from drying out. If the cavity is to be filled immediately, then paint the cavity with cool tar.

Experiments have shown that a filling of

sawdust and tar

has numerous advantages over a cement filling, particularly in that it is pliable after being placed in the cavity; in the case of large ornamental trees where large hollows are to be filled, it will be found that a composition of tar and sawdust bends with the tree. The tar has preservative and antiseptic qualities which tend to preserve the wood with which it comes in contact.

The sawdust is mixed with hot tar and packed tightly into the cavity. Where a long and wide cavity is to be filled, it will be of advantage to tack a piece of fine wire mesh netting over the face of the cavity to prevent the mixture from working out while being rammed in. When the cavity is completely filled, the surface should be given several coatings of tar, or a facing of cement (one of cement to six of clean sand). The surface of the filled cavity is left a little below the bark line, so that the cambium layer may roll (or grow) over, and eventually bury the treated surface with healthy tissue.

low supply of both nitrogen and phosphorus.

Somewhat similar tests started in 1914 on soil designated as Dunkirk silt loam are now showing results comparable to those given here.

No fertiliser has had any influence on fruit maturity, nor has any treatment affected pro or con injury from winter temperatures. The sugar content of the Grapes has not been affected one way or another through fertilisation.

The trouble known as "shelling" has in no manner been checked because of potash applications; neither has nitrogen nor phosphoric acid lessened it.

Commercial fertilisers will not prove profitable if used on poorly drained soils, or if weeds are not controlled during the active growing period each year. Applications should be made early in the Spring and the entire surface of the soil treated.

Rye is probably the most satisfactory green manure crop.

Results similar to those reported here are not impossible on similar soil types.

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8 9 10 11 12 13 14
15 16 17 18 19 20 21
22 23 24 25 26 27 28
29 30 31

Apply
Half
the

PHOSPHATES
and the POTASH
with the
GREEN CROP

JULY

1 2 3 4 5 6 7
8 9 10 11 12 13 14
15 16 17 18 19 20 21
22 23 24 25 26 27 28
29 30 31

Add
Remain-
der of
the

PHOSPHATES
in the
CUTTING'S DITCH

AUGUST

1 2 3 4 5 6 7
8 9 10 11 12 13 14
15 16 17 18 19 20 21
22 23 24 25 26 27 28
29 30 31

Sow
1-2
cwt.s.
per
acre

"AMMONIA"
when turning down the
GREEN CROP

"BALANCED" Manuring ensures QUALITY and YIELD
but apply the "AMMONIA" EARLY

Cold Storage In Australasia

Orchardists' and Fruit Cool Stores Association of Vic.

Nineteenth Annual Conference

THE nineteenth annual conference of the Orchardists' and Fruit Cool Stores Association was held at the Mechanics Hall, Bairnsdale, on May 26, 1937. Mr. F. Moore presided. Over 50 delegates attended from various parts of the State, also Messrs. E. N. Robinson (Federal Co-ordinating Officer), R. Wilkinson (Electricity Commission), F. M. Read (Senior Inspector of Horticulture, Department of Agriculture).

The President of the Shire, Cr. T. W. Murphy, welcomed the delegates.

In officially opening the Conference, the Hon. J. M. Balfour traced the history of the industry and spoke of the value of cold storage. Publicity had materially helped to stabilise the dried fruits industry, and he felt that good results would follow the Apple Publicity Campaign.

At a later stage of the conference the Hon. J. M. Davis, M.L.C., and Mr. J. W. McLachlan, M.L.A., attended,

and commended the producers on their efforts to bring about improvements in the fruit industry, which was one of national importance.

Annual Report.

The annual report stated that statistics collected by the Government Statist regarding fruit in cool stores in Victoria had been circulated to members. Methods for forming an Engineers' Association were being considered. So far it had been found impossible to secure a reduction in the charges for electricity for cool stores. With regard to the legal case in which the Batlow Packing House and Cool Stores Rural Co-operative Society Limited sued a shipping company for faulty carriage of Pears in the s.s. "Port Brisbane," the Association and its members had contributed £24/19/- towards the Batlow Co-op's expenses. In reply to representations, the Minister for Agriculture had undertaken to bring about

improvements in relation to Science Officers, so that these men could be retained in Victoria.

The Apple and Pear publicity campaign conducted by the Association last year (the report continued) had brought good results. The Association was co-operating with the Australian Apple and Pear Export Council in regard to a general campaign for increasing the consumption of Apples and Pears in Australia. Other matters dealt with were the duty on red oil, remission of sales tax, Codlin Moth control, railway freights, tariff on fruit cases and spraying materials, depreciation of cool stores buildings and plants.

Sympathy was expressed to the directors and shareholders of the Orchardists Cool Stores, Doncaster, in relation to the recent disastrous loss by fire—the plant, portion of the buildings, and 50,000 cases of fruit having been destroyed.

Delegates expressed warm appreciation of the action of the directors of the Orchardists Cool Stores for their prompt and untiring activities in saving 60,000 cases of fruit in the adjoining building. Mr. J. J. Tully responded.

The financial statement showed revenue £261/18/11; expenses £224; leaving a credit balance of £37/18/11, plus £100 on fixed deposit.

The annual report and financial statement were adopted on the motion of the Chairman, seconded by Mr. L. Cole.

Engineers' Association.

There was a lengthy discussion as to the formation of an Engineers' Association under the aegis of the Cool Stores Association, certain difficulties having arisen as to the admission of private store owners attending engineers' meetings, when technical matters would be discussed.

It was decided to ask the Executive of the Cool Stores Association to meet the engineers as early as possible to see if the difficulties could be overcome, and to report to the next quarterly meeting.

Interest Rates.

Letter received from the Victorian Government stating that the maximum rates of interest on loans to cool stores would be 4 per cent., as from July 1, 1937. Noted with appreciation.

Official Luncheon.

A complimentary luncheon was tendered to delegates and visitors by Mr. G. W. Peart (Bairnsdale). After honoring the Loyal toast, Mr. L. Cole proposed the toast, "Federal and State Parliaments" (responded to by Hon. J. M. Balfour, M.L.C.). Other toasts were "Our Visitors," proposed by Mr. Frank Petty, responded to by Cr. Murphy; "Our Host, Mr. G. W. Peart," proposed by Mr. F. Moore, and responded to by Mr. Peart; "The Chairman," proposed by Mr. J. J. Tully and responded to by Mr. Moore.

Gas Storage.

Mr. A. O. Nicholson gave an address on "Gas Storage," showing how Bananas, Tomatoes and soft fruits could be held for several months in gas storage without refrigeration. A vote of thanks was conveyed on the motion of Mr. E. H. Hatfield.

Charges for Electricity.

Letter received from Electricity Commission in response to request for reduced charges, pointing out the services rendered by the Commission to all sections of the community, and stating that with the increasing use of electricity the tendency for allocating charges was generally downward.

Mr. R. Wilkinson attended on behalf of the Electricity Commission, and gave a short address and answered questions.

Buildings and Plant.

Mr. F. Petty introduced a discussion on "What is the Ideal Building and System for a Fruit Cool Store." His recommendations were as follows:—

Building.—Brick, with cork insulation, or as the next best alternative kiln-dried hardwood with a mixture of shavings and sawdust for insulation. Insulation to be 15 to 18 inches in the external wall. Chambers to consist of 8 spaces, each to hold 637 cases stacked 7 high, 13 in row, with 7 rows, making a total to each chamber of 5,096 cases. Allowance to be made for a central chamber to be used during the export season exclusively for the storage of packed fruit prior to shipment.

Plant.—Slow travelling Diesel engine driving a high-speed compressor—2½ h.p. to be allowed to each ton of refrigeration. The engine room to be situated in the centre of the building.

System.—Direct expansion, with coils on the ceiling, clearance of 18 inches being allowed between the ceiling and the coils so as to prevent condensation of moisture on the ceiling.

There was a lengthy discussion in which many delegates took part, and Mr. Petty was thanked.

Apple and Pear Publicity.

Mr. J. K. Heughan, of the Melbourne "Herald," gave an interesting address emphasising the necessity of educational publicity to increase the consumption of Apples, and was cordially thanked.

Mr. R. E. Boardman gave a report on the publicity campaign which he had conducted on behalf of the Cool Stores Association, and was accorded a vote of thanks on the motion of Messrs. Hutchinson and McLean.

Mr. F. Moore spoke of the diminishing markets overseas and the efforts of the Apple and Pear Council to develop the Australian market. request had been made to the Commonwealth Government for the means of collecting a uniform per case levy on Apples and Pears sold in Australia for publicity purposes, but this has not so far been agreed to. For the season the Commonwealth Government had offered to provide up to £5,000 on a pound for pound basis with State Governments. The Tasmanian and Victorian Governments had each agreed to provide £1,000, thus making £2,000 of the Commonwealth

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It gave me the power of 260 pairs of hands in a simple and compact form; the lever is short, so that I am able to stand firm-footed and get the full stroke. There are two speeds in the machine, as well as an automatic release that allows me to let off a strain, or as the machine will work in any position, it comes in for all jobs that would require a chain block. It is taken to the job on a pair of wheels like a barn truck, and is rigged for work in a few minutes. The ropes are in lengths that I find easy to handle, and each one is fitted with hook and loop couplings, so simple and absolutely IT for effectiveness. The makers have included a sturdy snatch block with a novel method of securing to the ropes, and also a fine type of firm gripping rope shortener. The latter makes it very easy to accommodate the lengths of rope to the tree or stump being pulled, and is quickly released from the rope. The combination of so many time and labor saving features makes the "Monkey" Grubber a superior grubbing outfit.

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Leading Stores and
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it possible. It was necessary for growers to find the money for adding their commodity. The cool storage space controlled by members of Orchardists' and Fruit Cool Stores Association as 811,000 cases, and a levy of 1d. a case would yield about 100, that is, if all interested agreed to provide this levy. This would ensure a similar amount in the Commonwealth grant.

It was moved:—"That a levy of 1d. a case be imposed on all affiliated growers to be met by the shareholders of the stores and paid into the Association's account. The purpose of the levy will be to augment the sum provided by State Governments to ensure the full allocation of the Commonwealth grant."

Mr. Hutchinson seconded.

There was an animated discussion, in which Messrs. H. Willoughby, W. Mair, J. J. Ahern, Stanford, G. H. Harkhauser, L. G. Cole and others took part.

Mr. A. Perry stated that with regard to the 10,000 cases under his control he was willing for the levy to be paid. Mr. J. J. Tully made a similar offer. The motion was carried unanimously.

In reply to a question, the Chairman stated that the levy would be on a per case basis for Apples and Pears, and that the publicity would cover both these fruits; it would be delegates to go back to their associations and put the case to shareholders for securing this levy.

Government Cool Stores.

Mr. A. F. Bloom spoke of the value of the Government Cool Stores to various industries and the community generally. These stores had suffered extensive damage by fire and moved at the conference recommend to the Government the rebuilding of the stores.

Cr. W. Mock seconded the resolution, which was further supported by Mr. J. J. Tully and carried unanimously.

Insurance.

At the instance of Mr. J. H. Lang, a discussion ensued regarding the allocation of claims for insurance by shareholders in the event of fire.

Experiences were quoted by several speakers, the consensus of opinion favoring a system of automatic insurance, by which the fruit was uniformly insured according to the quantity in the store, checked at fortnightly intervals.

Grading Regulations.

The Chairman reported on the recent Interstate Grading Conferences. He understood there was little likelihood of the gazettal this season of the three grades as decided at the conference on April 13 last. He considered that grading regulations should be drawn up to provide for commercial marketing, and further, that the administration should be tightened to prevent the seriously inferior fruit coming on to the market.

Spray Residue.

Mr. McLean stated that Harcourt growers had to spray eight or nine times, and that brushing did not remove the residue, and washing appeared an expensive method. He asked if the Department of Agriculture had developed a Codlin Moth control spraying programme which was effective without the necessity for washing the fruit.

Mr. Read stated that as regards efficiency their two methods of straight leads, and three leads followed by oil for the balance of the season showed no appreciable differences as regards moth control. By the use of the oil the spray residue had been reduced, for all practical purposes, to within the tolerance. In

the parts of U.S.A. where Codlin Moth was worse than here, washing machinery was part of their standard equipment.

Office-Bearers.

Mr. Moore stated that owing to increasing pressure of duties he would have to resign as President, thus leaving Mr. J. J. Tully as immediate Past-President. He thanked Mr. Tully for his courtesy in making this arrangement possible. Office-bearers were elected as follows:—

President, Mr. L. G. Cole; Past-President, Mr. J. J. Tully, Vice-Presidents, Messrs. F. Petty and W. P. Mair; delegate to Chamber of Agriculture and Standards Committee, Mr. F. Petty; Delegate to Employers' Federation, Mr. L. G. Cole; Auditor, Mr. Barrett; Secretary and Treasurer, Mr. H. J. Noonan.

Mr. Stanford spoke in cordial terms of appreciation of the work of the Executive Committee, and proposed a hearty vote of thanks. Mr. Willoughby, in seconding, spoke in similar terms, and the resolution was carried with applause.

Fruit Shops Hours.

Mr. Cole spoke in opposition to the action of suburban fruiterers in their decision to close shops on Saturday afternoons. Mr. Willoughby strongly supported Mr. Cole in his contention, and it was decided to refer this matter to the Victorian Fruit Marketing Association and the Southern Fruit-growers' Association with the object of arranging a joint deputation to the Minister for Labor.

Railway Trucks.

The Chairman directed attention to charges on railway trucks for conveying fruit to the seaboard. In an 11 ton truck the minimum loading to secure low rates was 9 tons; he considered the minimum should be 6 tons, and it was decided on his motion, seconded by Mr. Lang, as follows:—

"That a request be made to the Railway Commissioners for a revision of the conditions set down with regard to the minimum tonnage that could be loaded into trucks to obtain full benefit of fixed rates."

VISIT TO YALLOURN.

On Thursday, April 27, delegates visited the Electricity Commission's brown coal deposit at Yallourn, and were entertained at lunch by the Commission. A visit was paid to the "open cut," where, despite the 10,000 tons of coal used daily, there is sufficient in reserve for 1,500 years. The visitors inspected the huge electrical works and the briquette plant. At the instance of Mr. F. Moore, a hearty vote of thanks was conveyed to the Electricity Commission.

APPLE PUBLICITY CAMPAIGN.

The Federal Government has agreed to provide up to £5,000, pound for pound, with State Governments for the promotion of an Apple and Pear publicity campaign in Australia. The State Governments of Victoria and Tasmania each agreed to provide £1,000 and advice is now awaited from the other States. It is pleasing to note that growers' associations are contributing to the funds.

WOOD WOOL
Finest Grade for Export Fruit.
STRAWBERRY BOXES.
and Fruit Containers.
Prices and Particulars on Application to
AUSTRALIAN BERRY BASKETS CO.
175 Kent Street, Richmond, Vic.
Tel. J1263.

Cooper Spraying Materials

In announcing the appointment of
Messrs. Ramsay and Treganowan Ltd.

... of ...

469-477 Latrobe Street, Melbourne

as the Victorian Distributors of Cooper Spraying
Materials; we would like to express our thanks to

Mr. F. R. Mellor

who has, during the past four years, acted for us in
that capacity to our entire satisfaction, and we are
glad to feel that under the new arrangements he
will still interest himself in Cooper Products



WILLIAM COOPER & NEPHEWS [Australia] PTY. LTD.
4 O'Connell Street, Sydney

VICTORIA

Fruitgrowing at Shepparton, Vic.

Progressive Shepparton.

SHEPPARTON, the Queen Town of the Goulburn Valley district, is the trading centre for the primary producers of these fertile lands. The "Shepparton Preserving Co.," which is centrally situated, and adjacent to Grahamvale, Lemnos, Orrvale and Shepparton East, is one of the chief commercial factors for success, as the company handles most of the canning and preserving fruits of these and other near districts.

This gigantic concern is paying handsome dividends to its shareholders, which speaks volumes for its directorate and management.

The saleyards, a mile out of the town on the Dookie-road, are very extensive, and are visited weekly and oftener, by buyers from Victoria and N.S.W., where cattle, sheep, pigs, horses etc., are yarded and as the roads are first-class, and water abundant there is no difficulty in transporting stock and goods to and from this town.

At the present time many brick buildings, private and public, are in course of erection, which testifies to the progressiveness of the place.

Undoubtedly the water which is

supplied by channel is the life-blood of the settlers.

There is no doubt that nature has provided everything necessary for man to make a success of the Goulburn Valley under irrigation.

We have here good soil, splendid climate, abundance of water and handy to Australia's two largest cities, with nearly level grades of lands, which is absolutely essential for flooding.

Reverting to Shepparton town, which is on the East side of Goulburn River: This is now a borough, with wide tarred streets (planted with shade trees), concrete paths, modern shops, all the banks have fine buildings, modern garages, splendid hotels, theatres most modern, cement pipe works, jam factories, butter and bacon factories, cool storage, packing houses for interstate and export fruits. Messrs. S. J. Perry & Co., the fruit exporters operate largely here, with contracts at a given price extending over a number of years. Messrs. Perry's own special cases for fruit for delivery to their packing houses, are to be seen in nearly every "orchard shed" in and around Shepparton.

The Goulburn River, as nearly

everyone knows, flows northward, and is fed by a number of creeks on its way to the Murray River, with several weirs, which impound the waters for irrigation purposes. The weir near Warring is the one which directly supplies Shepparton Shire on the east side, also Rodney Shire on the west side of the stream.

The whole country from Seymour has a gradual fall to the north to the Murray and so the main channels come in from the south. A feature of the water scheme is that most of the overflow water find their way back into the river again and can be used further north.

There are hundreds of miles of channelling in these shires, with thousands of acres under irrigation.

Even the "dry" farmers receive great benefit from these channel streams which supply their stock and domestic needs. The writer, in conversation with the settlers, was told that there has been enough water and to spare ever since the great drought of 1914—consequently dairying, stock fattening, lamb raising, as well as fruit and vegetable culture, has made great strides since the advent of the water.

Many of the larger fruitgrowers, as well as other land holders, are growing tobacco on shares with the foreign population (most of whom are now naturalized British subjects). These Albanians and Italians are very industrious, working from daylight to dark and certainly are assisting Na-

ture to bring forth her utmost increase.

The experimental plot at Grahamvale, for testing sprays, dustings, fumigations, etc. in tobacco culture especially to combat blue mould and fungus diseases is hoped to be of immense benefit. Tomatoes, Peas, Beans, are extensively grown also under this share system.

Many of these foreigners have secured holdings of their own and are employing their countrymen as well as itinerant workers.

It is computed that in the busy season 2,000 extra hands are employed in the district, and it is difficult for the townspeople to get domestic help during this period, as smart hands can earn big money in orchard, factory and cannery.

In Shepparton there are no empty houses, consequently there are many camps on the river reserve, these are built of every conceivable material.

To a certain bishop a wealthy woman complained that her domestic showed a strange indifference to their fate in the next world.

"I don't think they care whether they go to heaven or not," she said.

"I suppose you have assured them of your hope to be there?" asked the bishop.

"Assuredly."

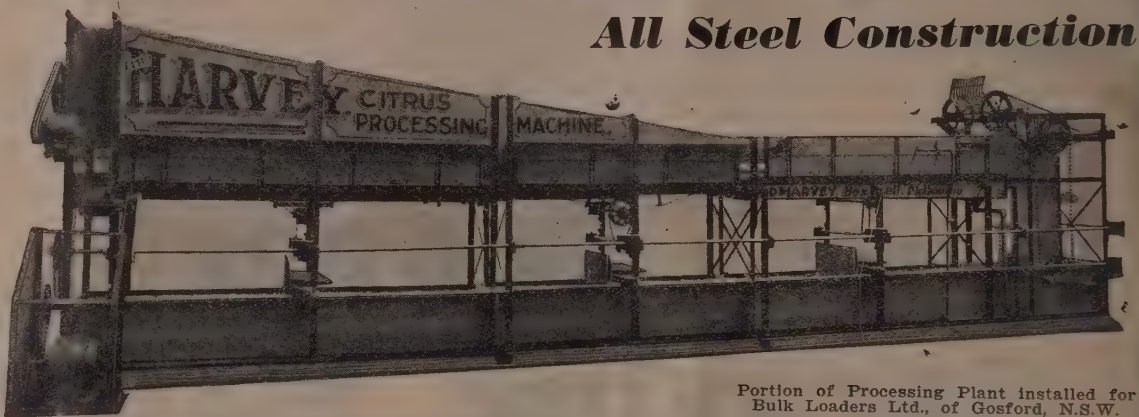
"Then do you not think that may be the precise reason for their indifference?"

The Latest in Citrus Washing Plant

The HARVEY Citrus Processing Machine

Saves Space

Can be used with Hot or Cold Water



Portion of Processing Plant installed for Bulk Loaders Ltd., of Gosford, N.S.W.

Covent Garden London, Praises Efficiency of Harvey Grader

"This fruit opened up in a very fresh and firm condition, and was most attractively packed. It was very pleasing to note the regularity of the shape of this extra fancy line of fruit—a particular feature which is usually lacking in many Tasmanian packs. The grading of sizes was very accurate—it will be very interesting to know what type of grading machine you use, because we found your fruit very free from grader scratches and bruises. Your packing is the very best we have seen on the market this season. It is similar to the American in such a way that it shows a very firm pack, and an even bulge, which has not been obtained by using different sized apples." (Extract from letter received by A. B. Curran, Esq., East Tamar, Tasmania, who uses a "Harvey" Grader.)

Citrus Graders, Dry Polisher Brushes and Packing House Equipment

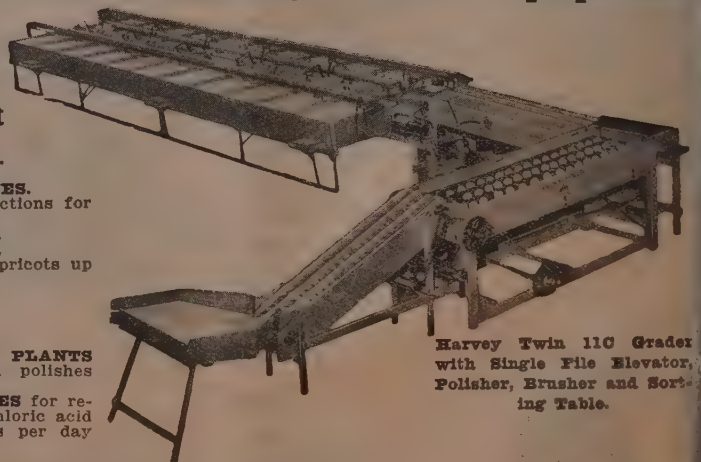
HARVEY PRODUCTIONS ARE IN DEMAND FROM MANY PARTS OF THE WORLD

HARVEY PATENT FRUIT SIZER GRADES BY COUNT, WHICH GIVES A FIRM PACK FREE FROM GRADER SCRATCHES AND BRUISES.

Start right. Even a single-sided Harvey unit will form the splendid nucleus of a grading and packing plant that can be added to incorporated with other units as the orchard comes into production or your business expands, and will form the nucleus of a 2—3—or 4-quality color and count grading plant that will not go out of date. The Harvey 1937 Fruit Sizers have every desired feature incorporated in their patented make-up—Independent Adjustable Sizing Rollers mounted on Ball Races—each roller, every other one, or any roller may be driven or left free to suit—meet any difficulty for accurate grading.

Packing House Equipment

GRAVITY CONVEYORS.
COOL STORE TROLLEYS AND TRUCKS.
LIDDING PRESSES.
APPLE AND CITRUS WIPING MACHINES.
FRUIT GRADERS—With adjustable sections for size and count.
SORTING TABLES for color and quality.
SPECIAL PEAR AND LEMON GRADER.
CANNERY GRADERS—For Peach and Apricots up to 4,000-case capacity per day.
TOMATO GRADERS.
PASSION FRUIT GRADERS.
CITRUS GRADERS.
DEHYDRATORS.
CITRUS WASHING AND STERILISING PLANTS—Soaks, sterilises, scrubs, dries and polishes Oranges.
PEAR AND APPLE WASHING MACHINES for removal of arsenate of lead by hydrochloric acid and other means, 450 to 7,000 cases per day capacity.
PRUNE GRADERS.



Harvey Twin 110 Grader with Single File Elevator, Polisher, Brusher and Sorting Table.

Daniel Harvey Limited

Manufacturers of Leading and Most Complete Line of Cultivating Implements for the Fruitgrower, Vinegrower and Citrusgrower.

ORCHARD IMPLEMENT SPECIALISTS

Box Hill, Vic.

AGENTS IN ALL STATES.

Southern Fruitgrowers' Association

N executive meeting of the Southern Fruitgrowers' Association was held at Box Hill on 6. There were present Messrs. Beet (President), O. White, L. b, E. Noonan, W. A. Thiele, J. W. Hall (Secretary). Apologies received from Messrs. L. Berrell, G. G. Miller and F. C. 9.

r. Rex Toogood attended by invitation to discuss the amending of the constitution.

Selling Fruit by Count.—Letter received from Mr. J. McDonald, M.L.A., stating that he was a strong supporter of selling fruit by count instead of by weight, and would do his utmost to have the desired reform introduced. Hon. E. J. Hogan, Minister of Agriculture, wrote stating that the Government was not prepared to approve the submission of a Bill to Parliament making the change from weight to count compulsory.

Apples from New Zealand.—Letter received from the Minister for Trade Customs, dealing with the importation of Apples from New Zealand, and showing that as 74 cents, valued at £66, were received from New Zealand during 1935-36, and that 800 cases per week were placed on

the Sydney market from the mainland, there was no cause for alarm.

Royal Agricultural Show.—It was resolved that a letter be sent to the Royal Agricultural Society asking that a panel of Judges be drawn up, and suggesting that the names of Mr. W. A. Thiele and Cr. W. Mock be added to the list.

Fruit Shop Saturday Afternoon Closing.—It was moved by Mr. W. A. Thiele and seconded by Mr. E. Noonan that this Executive strongly oppose the closing of fruit shops on Saturday afternoon, and that the foregoing resolution be forwarded to the Victorian Fruit Marketing Association, Retailers', Market Gardeners', and Cool Stores Association.—Carried.

Annual Meeting.—The Secretary reported having booked the Town Hall for Thursday, July 1, from 1 p.m. to 5 p.m. for the annual meeting.

It was resolved that Mr. Robertson be invited to attend and speak on "Fungus Diseases."

Distribution of Apples.—The President stated that he had arranged to distribute thirty cases of Apples to five Collingwood State Schools on the following day, and that he would make a further appeal later so that schools in other suburbs could be likewise treated.

ROADSIDE TRADING.

Retailers also commend the action of the Lilydale Shire in their decision not to renew licenses for roadside trading after June 1. Retailers point out that much inferior fruit was previously disposed of in these roadside stalls.

600,000 CASES APPLES.

Harcourt's Splendid Crop.

Over 300 extra hands were required this year to harvest Harcourt's Apple crop, which is estimated at 600,000 cases. The quality is excellent, probably the best in recent years, of splendid color and size, and free from Codlin Moth and Black Spot.

The Pear crop was light, with Winter Nelis bringing a high price for export. As an indication of the activity in the district, it is reported that during March over 80,000 cases left the railway station.

POWER ALCOHOL FROM WASTE FRUIT.

Mr. H. J. Farrence, of Vermont, has written an interesting letter to the Editor pointing out the value of manufacturing power alcohol from waste fruit.

DISTRIBUTION OF APPLES.

Appreciated Activity Amongst School Children in Southern Victoria.

APPRECIATED SERVICE was rendered to children in the industrial suburbs of Melbourne in the free distribution of Apples, the fruit being provided by growers in the Vermont, E. Burwood, and other districts. Mr. Fred Beet, President of the Southern Victoria Fruitgrowers' Association, organised supplies from surrounding districts, and arrangements for distribution were made through the Victorian Fruit Marketing Association.

To date 12 schools have been visited, each child being given two Apples. At each school a short address was given by Mr. R. E. Boardman regarding Apples and health. It was pointed out that the old saying of an Apple a day keeps the doctor away had been superseded by the advice—an Apple after every meal. Further, that an Apple should be eaten last thing at night, the Apple being nature's best toothbrush. Over 6,000 children have been reached in this way, and it was felt by those in charge of the distribution that this form of propaganda was indeed most helpful. Mr. J. W. Aspinall, Secretary of the Southern Fruitgrowers Association, was present throughout, and assisted in the distribution of Apples. The fruit was supplied by Messrs. F. Beet, Thos. Rose, M. Brown and other growers. Many letters of appreciation have been received.

OIL SPRAYING IMPROVES TREES.

Advice is to hand from the Vacuum Oil Co. Pty. Ltd. pointing out the good results of their scientific tests on the bark of fruit trees in relation to the application of oils. These tests had shown that Gargoyle spraying oils promoted the needed bark elasticity, cleansed trees of harmful pests and diseases, and prevented harm that would otherwise accrue from the astringent action of other sprays. Best results were obtained by spraying close to the time of bud development, not before the end of July, but just when the first warm sunny days and swelling buds indicated the approach of Spring.

SUBSOIL FERTILISER.

Excellent reports have been received regarding the Hannaford Patent Subsoil fertiliser. This method of manuring enables the manure to be put right down to the roots of the trees and at the same time breaking up the hard soil under the plough depth. This machine, which was advertised in the "Fruit World" last year, has been improved, and gravity feed has been introduced instead of force feed, experience proving that the latter method of feeding was unnecessary. This has also enabled a reduction of the price from £32/10/- to £27/10/-.

Further particulars regarding this subsoil fertiliser may be obtained on application to Mr. H. O. Hannaford, Belair, South Australia.

Letter to the Editor

APPLE PUBLICITY.

(To the Editor, "Fruit World.") Dear Sir,—The "Editorial" in the May "Fruit World" on the need for publicity to increase the sale of Apples was most timely.

One is apt to look at many questions from one's own standpoint, and thus orchardists naturally tend to think of receiving payable prices for their fruit, but in addition, when fruit is not in demand, there is undoubtedly a tendency for an unhappy frame of mind to be created by that fact.

On the other hand, if it can be established that the health of the consumer is benefited through eating Apples, and arising from a realisation of that fact the public are anxious to purchase Apples a very much happier atmosphere would be created.—Yours, etc.,

"ORCHARDIST."

Victoria, 25/5/37.

GOODMAN'S FRUIT TREES

With Goodman's you are assured of TRUE-TO-NAME stock that has been propagated from heavy cropping trees of proved capacity. Goodman's guard against disease — Trees are pest-free and can be certified so! You will reap bountiful harvests from them in the years ahead.



APPLES
PEARS
PLUMS
PEACHES
APRICOTS
CHERRIES
ALMONDS
CITRUS, Etc.
Catalogue Free

Our nurseries cover 170 acres. They are situated in a district eminently suitable for raising healthy, fibrous-rooted trees that do well in any climate — Orders come from America, Africa and New Zealand. May we prove our claims to you with a consignment for this season's planting?

C. J. GOODMAN
Picnic Point Nurseries
Bairnsdale - Victoria

Fruit Shops in Melbourne Suburbs

Close on Saturday Afternoons.—A regulation made by the Mayor in Council on November 16, that all fruit and vegetable shops throughout the Melbourne metropolitan district (excepting those enclosed by Flinders, Spencer, Latrobe and King streets) will be required to close at 1 p.m. on Saturdays from Monday, May 1, to Saturday, October 30.

This decision was arrived at after a majority of the shopkeepers had signed the requisite petition for the closed hours of business.

A resolution was carried at the recent annual conference of the Orchardists' and Fruit Cool Stores Association regretting the action of the retailers. It was stated that the Saturday morning market, which was developing nicely into one of importance, has been adversely affected.

The Secretary of the Melbourne Metropolitan Retail Fruiterers' Association has written pointing out to an examination of the takings of retailers on Fridays and Saturday mornings was fully up to the average compared with previous experiences when the shops were open Saturday afternoons. In some instances the takings have been above previous average.

PATENTS

GEORGE A. UREN

PATENT ATTORNEY

499 LITTLE COLLINS ST. MELBOURNE.

Gerrard Sales and Service


The Gerrard Fruit Packing Charts for Apples, Pears, Citrus are available, post free, on application.

Write: GERRARD WIRE TYING MACHINES CO. PTY. LTD.

18-24 Ireland St., West Melbourne, C.3

SYDNEY BRISBANE ADELAIDE PERTH
TOWNSVILLE HOBART





CANNING AND JAM FRUITS

APRICOT CROP LIGHTER IN N.S.W.

Owing to damage by late frosts and rains during harvesting, the Apricot crop in the Murrumbidgee Irrigation Area was lighter than last year, when a record crop of 845 tons was received, as against 635 tons this season. The entire production of canning fruits on the Mirrool section was sent to Sydney as the Leeton factory was not allowed to receive fruit from Yenda or Griffith, owing to an outbreak of Oriental Peach Moth.

Peaches showed a slight increase,

but the lower price by £2 per ton offset the heavier crop, and represented a loss to growers of over £5,000 in the Griffith area alone.

ANOTHER RECORD PACK.

The canned fruits pack for 1937 broke all records with a volume of 2,323,574 cases as against the previous record in 1936 of 2,221,429 cases. This was largely due to the big increase in the Peach pack, which reached 1,389,162 cases. The Pear pack was about the same as last year, with 807,244 cases, but

the Apricot pack dropped down considerably to only 127,190 cases, as against 379,435 cases last year.

Although the pack was large, stated Mr. W. J. Adams, Secretary to the Canned Fruits Control Board, satisfactory sales have been reported. Great Britain has sold over 1,300,000 cases to date, which is a record for this period, and sales on other markets, usually 150,000 cases, are expected to reach 250,000 cases.

A record season in both production and export is thus seen, and with the 800,000 cases normally consumed in Australia, a very nominal carry-over is anticipated.

60,000,000 CASES INCREASE.

U.S.A. Reports This in One Decade.

Americans are undoubtedly the greatest users of canned foods, and the figures released by the U.S. Census of Manufacturers show that between 1925 and 1935 the production of canned fruits and vegetables alone increased by over 60,000,000 cases. The figures for 1935 reached the tremendous record of 218,007,938 cases, comprising 53,600,677 cases of canned fruit and 164,407,262 cases of canned vegetables.

The fruit total included 10,000,000 cases of Pineapples packed in Hawaii. Peaches headed the list of fruits, with 11,500,000 cases, followed by Pears 4,750,000 cases; Apricots, 3,250,000 cases; and Apples, 2,000,000 cases. It is interesting to note that fruit salads required over 3,000,000 cases. Grapefruit juice 2,500,000 cases, and Grape juice 1,000,000 cases.

Of the vegetable pack, canned Tomatoes headed the list, with 26,182,504 cases, followed by Peas 25,000,000 cases; corn, 22,000,000 cases, and baked Beans, 17,750,000 cases.

Converted into cash values, the 1935 production of canned fruits and vegetables was worth to the nation over £200,000,000.

Expected to be Popular.

Fine Foods of Canada Ltd. has begun to market whole Tomatoes in cans. Canadians are large consumers of Tomatoes, and this new venture to meet this satisfactory condition in Canada, especially during the winter months, when fresh Tomatoes are imported from the southern States of U.S.A. and are sold at relatively high prices to those wishing to have salads and special dishes. These, however, lack color and flavor in comparison with Canadian Tomatoes in season.

This condition influenced the above company in their decision to preserve the vine-ripened, rich, red Canadian fruit in such a way as to approximate the fresh Tomato and eliminate the importation of what they consider inferior samples. After laboratory tests, a new method was evolved for packing Tomatoes in special cans containing an average of about five large, red, ripe Tomatoes, packed one on top of the other, enabling them to remain practically whole when the can is opened.

It is the first effort reported in which the fruit has been packed in this form in specially designed cans, and is expected to revolutionize the sale of canned Tomatoes in Canada. The first reaction has been decidedly satisfactory and the entire output was speedily snapped up within a few weeks of samples being available.

The new can is 3½ in. in diameter and about 6½ in. high, contains 28 oz. net weight of fruit. One advantage claimed is that uniform size fruit can be used, leaving just sufficient space for the juice to give a cushion to prevent bruising or crushing. The cost incurred in a special can is slightly higher, but the selling price will still be less than imported fresh Tomatoes from U.S.A. with duty and shipping charges added. Attractive labels will create window appeal and assist sales.

??? ??? ???
QUERIES QUESTIONS DOUBTS

As to the Best Outlet for Your Fruit
can be dispelled by consigning it to

T. J. POUPART LTD.

COVENT GARDEN LONDON, W.C.2.

SOUTHAMPTON BRISTOL LIVERPOOL HULL

Account Sales rendered are the best test
of Salesmanship. On that test we have
emerged from obscurity in 1895 to world-
wide repute in 1937

Consignments of Oranges Solicited

Separate Department for Dried and Canned Produce and Pulp.

— AT —

SPITALFIELDS MARKET

London, E.1.

Tasmanian Growers ship through Eric E. Burgess, 88 Collins Street, Hobart.

Victorian Growers ship through Fred J. Andrew, 153 William Street, Melbourne.

CANNING IN FRANCE.

It will be rather a surprise to many to learn that the canning of many kinds of foods is such a large industry in France. We have just received a copy of "Le Fer-Blanc et les Conserves France," issued by the International Tin Research and Development Council, London, which is devoted entirely to the story of canning in France.

The book is profusely illustrated, is printed entirely in French, of 16 pages, half of which are devoted to well-arranged pictures. The text is written from the point of view of the wholesomeness of canned foods, and is intended primarily for dietitians and medical advisers.

Amongst many instructive subjects dealt with are methods of preserving foods, the nutritive values of canned foods, food regulations as operating in France and a brief account of tinned manufacture. The illustrations include the processing of all kinds of fruit, fish, condensed milk, poultry and fresh meat.

ON THE PACIFIC COAST.

The Hershel Canning Company, Stockton, Calif., manufactured 15,000 cases of Tomato paste last season.

The Manteca Cannery (Calif.) handled 12,500 tons of agricultural products and paid \$27,000 in wages last canning season.

There are 51 commercial Olive groves in the Los Angeles county to operate 1,400 acres of trees in bearing, all of which produce is canned.

An Orange County grower produced an average of 15 tons of San Marzano Tomatoes to the acre.

Six canneries in the Walla Walla district, Washington, packed 1,900,000 cases of canned Peas in 1936.

2,300 PEOPLE EMPLOYED.

Heinz Canadian Factory.

H. J. Heinz and Company, which recently commenced fruit and vegetable canning in Australia, whose trade mark is universally known as "57 Varieties," and whose parent company originated in U.S.A., employs 2,300 hands at their Canadian packing plant at Leamington, Ontario, in the busy season. They are now adding extensions to the plant that will cost in the vicinity of £200,000 to meet anticipated increased business.

PUBLICITY FOR CANNED PEAS.

The Canadian Pacific Exhibition parade, held at Vancouver each year, is viewed by thousands who pay homage to the productiveness of British Columbia. In the last parade, pride of place was given to the humble table Pea, but in this instance it was canned.

The most attractive float seen was entered by Canadian Cannery Ltd., and depicted an elephant (their trade mark) in modernistic atmosphere, in whose trunk was a pod containing four gigantic Peas. After the parade, the elephant was moved to the exhibition, and an advertising feature was further introduced, by which visitors were asked to guess the weight of the elephant and the Peas held in his tusks.

A vessel which, in her prime, carried thousands of passengers, is the "General Frisbie," of Seattle, Wash. She has now been converted into a floating cannery.

In 1936 California vegetable canners processed 40,892 tons of Spinach.

California has produced practically all of the canning, and 45 per cent. of the fresh Asparagus used in U.S.A. since 1929.



A winning window display of Australian products in England last year. This is typical of the advertising sponsored by the Commonwealth Department of Commerce.

Tot up your A.M.P. Bonuses and see how they've grown

IT is a pleasant occupation for an A.M.P. member occasionally to tot up his bonuses, and to see how they have added to his estate.

Three old members were comparing notes in a solicitor's office recently. They were all enthusiastic holders of many A.M.P. policies. Mr. R. took out his first policy, for £1,000, when he was 25. He showed that it had grown to £3,225. Mr. B. took out his first policy when he was 22. It was for £500 and has grown to £1,577. Mr. C. also took out his first when he was 25. It was for £1,500, and has grown to £4,768. A wonderful return for an investment of £8 a quarter. Tot up your bonuses and see how good they are.

When you have done this totting, consider well whether you should invest in more A.M.P. policies, if not on your own life, then on your sons' and daughters'. There is no better investment in the world. No other investment has shown such a consistently good return. Send to your nearest A.M.P. office for an experienced adviser to talk this question over with you. You will find him helpful and you can trust him with your confidences.

Get in touch to-day. Even to-morrow may be too late—who knows?

A.M.P. SOCIETY

The Largest Mutual Life Office in the Empire.
C. A. ELLIOTT, F.I.A., Actuary. A. W. SNEDDON, F.I.A., General Manager.

BRANCH OFFICE: 425 Collins Street (Cnr. Market Street), MELBOURNE, C.I.

VINCENT WHEATLEY, Manager for Victoria.

Head Office: 87 Pitt Street, Sydney.

Other Branch Offices at Brisbane, Adelaide, Perth and Hobart.
District Offices throughout all States.

GRUBBING

**WITH A
"DICGER" WINCH**

A Man can uproot more Trees and Stumps in
a Day than he would dig out in Ten Days

QUICK MANUFACTURING CO., 75 Penders Street, Thornbury, Victoria

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7 Bridge Street, Sydney. 312 Collins Street, Melbourne; and Branches.

Motor Cars, Trucks, Tractors

Oiled-Up Plugs

Temporary Remedies

ALTHOUGH spark plugs in the modern motor vehicle do not oil up in the Winter as frequently as in the Summer, one often sees clouds of smoke coming from the exhaust pipes on cars. Aside from the annoyance to others which this unnecessary exhaust gives, it is an outward indication of trouble in the machinery.

Oiled plugs cause misfiring, reduce power, cause a greater consumption of petrol, lessen easy starting, and response to the accelerator and are generally responsible for lowered efficiency in the car. Whilst the proper procedure to correct this trouble is to have the cylinders re-bored and oversize pistons fitted, an expensive expedient, but a temporary remedy is to change the oil in the sump, putting in entirely clean, new oil of the right grade to suit the climatic season.

See that the plugs are functioning properly, and are of a type that keeps reasonably hot. It may be necessary to use a softer plug in some cylinders if they prove to be the cause of the trouble. In town work the plugs can be softer than those used in hard country work with longer distances.

If the car then has to go into the country, where the throttle can be opened for some time, the result will be that blacksmiths' chorus, which is

generally referred to as pinking, and is certainly pre-ignition; a compromise is not to use full throttle so much.

Adjust the Slow Runner.

Plugs rarely become oiled so long as all the cylinders are firing regularly, while oil is sucked up into the combustion space when the throttle is closed. Therefore a little attention to the slow runner adjustment is worth while, and the longer the driver can keep the engine firing evenly the better will be the results, while on especially hot days the car should not be allowed to run down long hills with the throttle closed. For the same reason the engine should be set to run a little faster when the car is stationary and, as a point bearing on this, if the water temperature can be kept down to 80 deg., so much the better.

In addition, a spark gap fitted to the H.T. circuit to the plug will, in certain circumstances, keep a plug from oiling, and another device is to fit an adaptor into the plug socket, which raises the points farther out of the reach of oil.

Finally, if a plug does oil it should be replaced as soon as possible, for the longer the engine is run with one cylinder out of action the more oil will be pumped up into that cylinder.

PROBLEMS OF CAR PRODUCTION.

Because of some extraordinary problems of mass production, the manufacture of large numbers of motor vehicles is virtually a gamble. Broadly outlining the stages in the mass production of motor cars to members of the Melbourne University Commerce Society recently, the managing director of General Motors Holden's Ltd., Mr. L. J. Hartnett, said that before a manufacturer produced a new car or a new model, the first stage was to gauge, as accurately as possible, the needs of the public.

Once the type of vehicle and the price had been fixed roughly, the designing engineer had to design the best vehicle possible for the money allowed. All his plans had to be checked by a production engineer, whose duty was to ensure that the proposed vehicle could be mass-produced as an economical proposition.

If the manufacturer's estimates were too optimistic it would probably result in a heavy loss, he continued. If, on the other hand, the model retained its popularity for longer than was expected, a good profit might be made. Usually it was considered uneconomic to attempt mass production unless there was a reasonably safe market for at least 35,000 for the vehicle.

The gamble, of course, lay in gauging the market. Strangely enough, it had been found just as unwise for a manufacturer to produce a car a year ahead of its time as to produce one a year behind. The public appeared to have a rate of digestion for innovations, which could not be hurried.

CHEVS. POPULAR IN U.S.A.

Head All Registrations.

According to figures received by Preston Motors Pty. Ltd., Chevrolets took first place in the number of cars registered in U.S.A. during 1936. They had a margin of 181,696. Truck sales also gave Chevrolet first choice with a margin of 27,100 vehicles. Chevrolet figures were higher in 47 of the 48 States in the Union, and were highest in all months except September and October.

Compared with other makes, Chevrolet supplied 40.5 per cent. of all sales registered and increased their own figures by 37.7 per cent. over 1935.

GOOD NEWS.

400 Miles to the Gallon.

A Canadian is credited with producing an attachment to motor-car engines that will revolutionise car driving costs, if it proves successful.

The main principle of the system appears to be spiral, baffled so that all free drops of petrol are returned to a reservoir so that only completely vaporised fuel reaches the combustion chambers of engine.

The outstanding claim is made that the carburettor will give something like 200 miles per gallon, but petrol interests in that country are frankly sceptical of the astounding mileage per gallon claimed by the inventor.

A company has been floated in Winnipeg to develop the invention, and laboratory and road tests are to be conducted.

REGULAR LUBRICATION.

It is generally quoted as a wise working basis that the crankcase should be drained and refilled after every 1,000 miles of running, but it is not always done. To emphasise the wisdom of this attention, the Vacuum Oil Company tells us that in travelling 1,000 miles:—

The crankcase has revolved 3,000,000 times.

The camshaft has revolved 1,500,000 times.

Each valve has opened and closed 1,500,000 times.

The pistons have travelled farther than has the car, about 1,420 miles.

The distributor shaft has made 1,500,000 revolutions.

The breaker points have opened and closed 9,000,000 times.

The transmission, rear axle pinion and universals have revolved 3,000,000 times.

The rear axle and the tyres have made 750,000 revolutions.

It would appear then, to any person with ordinary intelligence, that correct lubrication is one of the most responsible attentions that a car needs.

DEFECTIVE HEADLIGHTS.

California sets an example which could well be followed on Australian roads. It refers to control of glaring headlights and the enforcement of the dimming requirement. Last year, police patrols stopped 185,143 motorists who were infringing the law. Of these, 14,827 were fined for having defective headlights.

CHEVROLET—The World's Sales Leader, Offers...

BIGGEST TRUCK VALUE

More Power Per Gallon, Less Cost Per Load
With The New 1937 Chevrolet

30 cwt. - 2 ton
and
COMMERCIAL MODELS.



The 1937 Chevrolet Trucks are entirely new vehicles, redesigned for greater efficiency at lower cost. They're the biggest truck value ever offered, because—The New Chevrolet Six-Cylinder Overhead valve Long-life Engine gives more pulling power than ever, but with an actual saving of fuel and oil consumption costs. The New Chevrolet power unit is now more forward mounted, adding to available load space and increasing durability by eliminating body overhang and lessening chassis strains.

NEW BIG VALUE FEATURES include: Improved Perfected Hydraulic Brakes—New Full-floating Rear Axle—Four-bearing Crank and Camshafts—New Improved Engine Supports—New Stabilised Front End—New Steering with Increased Ratio—New Stronger, Straighter Frame—New U-Type and Box Section Cross Members with Alligator Jaw Fastenings—New Spring Hangers, Springs and Spring Helpers.

Massive in looks, Chevrolet Trucks set new high standards of appearance with their steelstream styling, All-Steel Sedan-Type Safety Cabs, with V-Type Safety Glass Windscreen.

CHASSIS PRICES:

Commercial Truck from - £230

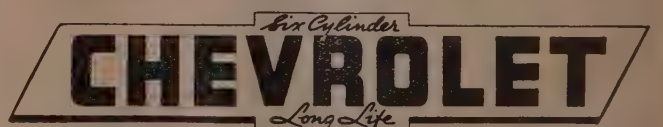
30 cwt. - 2 ton Truck

(131 w.b.) from - £277

30 cwt. - 2 ton Truck

(157 w.b.) from - £297

All Prices Plus Sales Tax.



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24 HOURS TRUCK SERVICE.

Book Reviews

We have received two books of interest to the canning industry, which we very briefly review herewith:—
The Wholesomeness of Canned Foods.

This is a contribution by H. B. Manshaw, B.A., A.I.C., and comes from the International Tin Research Development Council, London. It covers the development of canning and the efforts of Appert in France to preserve foods in a convenient form for storage and distribution, from a century ago, to the present.

The methods used in canning and the principles of the process are described shortly, and the extreme suitability of the can for the purpose is explained. The question of the safety of canned foods is thoroughly discussed in regard to the possibility of harmful effects arising from contact of the foods with the metal of the container and from decay or decomposition of them by bacteria. Medical testimony to the harmlessness of canned foods is not lacking, and for many reasons given their purity and quality need not be doubted. The dependence as to the extent to which vitamins and other nutritive values are affected by canning and by cooking is considered. It is of special interest that the British medical authorities have drawn special attention to the advantages to health made possible by the consumption of canned fresh foods in Winter time. Under modern conditions of life, canned foods are becoming more and more of a necessity, and the world output is already 12,000,000,000 cans a year.

The booklet can be obtained upon application to the Council's address, 10, Bedford House, 378 Strand, London, W.C.2.

"CANNING PRACTICE."

A valuable addition to the library of canners is "Canning Practice and Control," by Osman Jones, Chairman, British Food Manufacturers' Research Association, and T. W. Jones, Editor, "Food" and "The Industrial Chemist." Our copy is by courtesy of the publishers, Chapman & Hall Ltd., London. It is the latest publication upon this subject, and has just been released.

The book deals very fully with the equipment for a modern cannery, the process involved in the canning of all forms of food, laboratory service and research, examination of the food and the packed can, microbiology and the classification of bacteria with preventives and control, nutritive values of canned goods, cannery hygiene and waste. It is a practical study of actual canning conditions, mainly in England, and comes from long study and

How to Dry Plums

Using Surplus Fruit.

A reader forwards the following advice, culled from the "Southwest Times" (W.A.). It relates more especially to the drying of small quantities such as may be surplus fruit on a farm additional to what has been required for jam making.

Allow the Plums to ripen fully on the tree. It is essential that all the moisture escape during the drying process. The best way to ensure this is to immerse the Plums for a few seconds in a hot solution consisting of 1 oz. of caustic soda to nine quarts of water. This will penetrate the bloom and cause slight cracks to appear in the skin. Care must be taken not to overdo the immersion or the skins will split. If a very small quantity of Plums is being treated the skins may be pricked lightly all over with a needle immersion in the solution will then be unnecessary. After soaking the fruit may be dipped in clear water if desired, but this is unnecessary. Place the Plums in single layers on drying trays; hot sunny days with a breeze should dry the fruit in from five to eight days. Or the drying may be done in an oven with the door left open. Keep the temperature at about 110 deg. Fahr. until the skins begin to shrivel, then let it rise gradually to 150 deg. Fahr. As the Plums dry remove them from the trays. Put into box in which they can be stirred occasionally: this is to "even up" or "condition" the fruit. After several days, during which the Plums should become rather moist, again put on trays in the sun for a short while. Then pack the fruit away in boxes.

experience of the authors. Whilst highly technical, it is compiled in such a manner that anyone interested in the canning industry can understand and profit from. It is profusely illustrated with photographs of canning plants and sections, as well as charts, slides and other visual information. The publisher's price is 25/- net, and copies may be obtained from Chapman & Hall Ltd., 11 Henrietta-street, Covent Garden, London, W.C.2.

LEGAL ADVICE.

The motorist adopted pleading tactics.

"I wish you'd overlook it this time, constable," he said. "As a matter of fact, I was hurrying to town on very important business."

"Fraid I can't help that," said the policeman.

"I never drive fast as a rule. But I've got to get to town quickly to see my solicitor—"

"Well," said the policeman, "you'll have a bit more news for him now."

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30 James St., Covent Garden, London, W.C.2.

WAREHOUSES IN JAMES STREET AND 11-13 NEAL STREET.

Branches at—7, Stony St., Borough Market, London, S.E., and
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Sales by PRIVATE TREATY.

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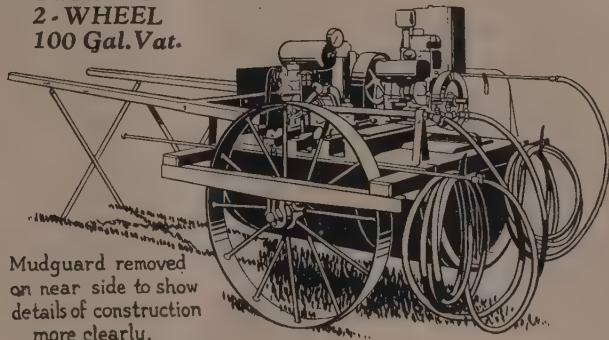
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They Last a Lifetime
Give Better Results
And Cost Less to Run

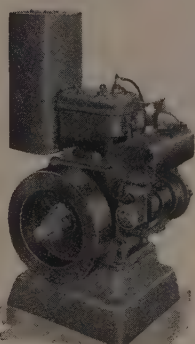
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2-WHEEL
100 Gal. Vat.



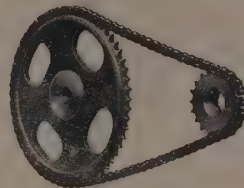
Mudguard removed
on near side to show
details of construction
more clearly.

RONALDSON-TIPPETT Spraying Plants embody features of design and construction never before seen in any spraying plant. Before building this machine we consulted orchardists in all parts of Australia . . . the result is a sprayer that growers have long waited for! It is quality-built from start to finish. The engine is a high-grade Ronaldson-Tippett roller-bearing engine, and the pump, a high-pressure, double-plunger spray pump, with stainless steel cylinders. Both engine and pump are totally enclosed and automatically oiled. All parts are quickly accessible. Drive is special quality roller-chain and the agitator, a rotary propeller type, belt driven. Belt is protected by a sheet-steel guard and has proved its superiority over all others. Vat is 100-gallon capacity.

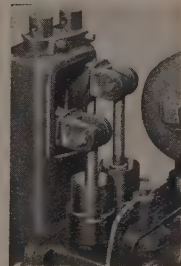
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ENGINE is one of the famous Ronaldson-Tippett Type N, renowned throughout Australia for life-long reliability. Has no equal for cheap running and accessibility.



DRIVE is specially designed quality-made chain. Totally enclosed and well oiled. Will give years of lasting service, without any repair expense.



PUMP CYLINDERS are of exclusive design, special stainless steel, ensuring longest possible life not only to the cylinders themselves, but also to the pump leathers. Easily replaceable and renewable.



AGITATOR is special four-bladed propeller type which ensures perfect agitation of all mixtures. Shaft is rustless bronze carried in large bearings.

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Implement Company, Grenfell St., Adelaide, S.A.
Westralian Farmers Ltd., Wellington St., Perth, W.A.
McLean Bros. & Riggs Ltd., 104 Murray St., Perth, W.A.

RONALDSON - TIPPETT

MOTHERCRAFT

The Feeding of the "Toddler"

(By Olive M. Green, Sister-in-Charge, Baby Health Clinic, Launceston, Tas.)

THE SECOND YEAR of baby's life is a very important one, and is a year in which unsuitable feeding and overfeeding are very common, producing their characteristic ill results. Broadly speaking, the simpler and plainer the food, the better, and we must remember to provide ample exercise for the jaws and teeth of the child. Consequently, there is a great need to plan the toddler's meals intelligently and not allow him to drift along indefinitely on "baby feed" or sit up to the family table and "take what is going."

Give three meals a day at this stage, with no "pieces" or milk between the feeds. Water or fruit juice only must be allowed between the meals. Introduce the new foods gradually, giving a small portion only until the child becomes accustomed to it. Teach the child to chew his food thoroughly and to take each new food that is good for him. The actual meal times will be fixed to suit the individual household, but regularity is essential whatever the hours chosen.

Breakfast should consist of porridge and milk, followed by crisp toast or baked bread and butter, and a drink of milk.

Dinner time provides variety. Go slowly at first, and as he gets used

to the various foods baby should learn to eat a good meal of solid food and finish up with five or six ounces of milk mixture.

For tea, give at first a spoon-feed of cereal jelly or milk pudding, followed by toast and butter and a drink of milk mixture. The ideal to aim at is a "dry" evening meal—that is, one without any pappy food and consisting solely of food that needs chewing. This is only achieved by patience and perseverance in training the child, but for the sake of the teeth and jaw exercise and the health of the nose and throat it is well worth while. Most children enjoy thin slices of brown bread toasted or baked in the oven until crisp—buttered cold, of course—and will soon learn to eat enough of this "hard tack" to form a good meal, with six to seven ounces of milk and a piece of Apple to follow.

Milk.

Milk continues to be a very important article in the baby's diet, but a child who is having a well-balanced diet does not need an unlimited amount of milk. From three-quarters to one pint daily is ample, including that used in cooking and making the milk puddings, etc. Give two parts milk and one part water, and continue

scalding the milk used. Use top milk or pure milk on the cereals and puddings. Cereal jelly is still given, though now unstrained porridge or granose should be introduced, a little at a time, until baby is having ordinary well-cooked porridge. Remember that too rapid introduction of unstrained porridge may cause diarrhoea as the digestive tract needs to be educated to deal with the coarse part of the meal. Use discretion, and be guided in every instance by the motions. Also continue to give twice-baked bread, crusts, crisp toast and stale brown bread—all to be given with a little butter or beef dripping. At this stage honey and marmite are excellent foods and baby will love these spread on his bread and butter.

Vegetables.

At one year baby begins his education in taking vegetables. These are first introduced in the form of a puree thinned down into a broth by the addition of melted butter or mutton stock. At first the broth is given clear, and a little later some of the vegetables are pressed through a sieve and added. All sorts of vegetables, both roots and greens, should be used, also barley or rice. Clear meat broths contain very little nourishment, but all vegetables contain valuable mineral salts and vitamins which are absolutely essential for health.

When baby's taste and digestion have become accustomed to vegetables served in broth, the next step is to introduce them separately. Spinach, Carrot, Cauliflower, and floury Potato

are the best vegetables to use at this early stage. Potatoes should be baked in their jackets, as this conserves their vitamin and mineral content. The other vegetables should be steamed or cooked in as little water as possible. When cooked, press through a fine sieve and serve warm, with a little melted butter or some meat gravy (the red gravy that escapes in carving from the cooked meat, and not the gravy made with flour in the roasting pan). Later, other vegetables such as Beans, Peas, Silver Beet, Cabbage, etc., are given.

Market Gardening Notes

EARLY CAULIFLOWERS.

One of the matters dealt with by the Melbourne and Metropolitan Retail Fruiterers' Association recently was that relating to complaints by the public that Cauliflowers turned black when cooked; further, that leaves fed to stock led to gastric trouble. It is suggested that the spraying or dusting of the vegetables with insecticide may be the cause of the trouble.

TEN COMMANDMENTS FOR TOMATO GROWERS.

The following adaptation of the Ten Commandments was made by Harry B. Daboll to impress upon growers, working under contract to canners, the necessity for keeping to their contract conditions. It comes from the "Canadian Food Packer."

1. Thou shalt not plough less than eight inches deep and expect a good yield of Tomatoes.
2. Thou shalt not harrow the soil twice and call it ready to plant.
3. Thou shalt not attempt to successfully grow Tomatoes without at least 500 pounds 4-12-4 or 4-16-4 fertiliser to acre.
4. Thou shalt not set a plant in the ground less than half its length.
5. Thou shalt not go fishing when thou shouldst go cultivating.
6. Thou shalt not pick the Tomatoes when half green and expect the canner to accept them.
7. Thou shalt not kill the inspector if Tomatoes are not as per contract.
8. Thou shalt not take the Lord's name in vain if thou haulst the Tomatoes back home.
9. Thou shalt not commit larceny by taking the canner's Tomatoes to market.
10. Thou shalt not take the canner's Tomatoes to market in the morning and go to church the following Sunday and seek forgiveness.

ONION GROWERS PROTEST.

Complaints of lack of buyers for Potato sales and of unprofitable prices, due to what was alleged to be the unfair price-cutting activities of road transport, were made at recent meeting of the Melbourne Potato Merchants' Association.

The chairman (Mr. J. Perrie) said the Potato trade was in a state of chaos as a result of the encroachment of road transport. He was sure most of the members of the association favored rail transport. Speakers declared many operators were unlicensed, and that others dodged the required inspection of loads.

It was decided to form a committee to seek enforcement of the existing laws through officers of the County Roads Board, Transport Board, and Agricultural Department.

Mr. W. L. Middleton (Victoria Railways) suggested they send a deputation to the Transport Board with a request for closer inspection of licenses and of loads.

Mr. F. Kirkwood (Melbourne) moved, and it was carried, to the effect that the conference view with alarm the serious effect on Potato marketing of the rival transport systems, and affirmed that the present non-profitable prices were largely caused by the competition of unregulated road transport.



THIS CROP WAS SAVED BY PESTEND SUPERFINE (TOBACCO DUST)

"Look fine, don't they?" said Mr. Short, waving a hand over 100,000 big, healthy Cabbages.

"Yet green, grey, and flying aphids nearly had the lot. Pestend Superfine, used in the spray duster, quickly destroyed them, however, and I expect a very successful crop."

"Yes! You can repeat this conversation, and add, too, that Pestend spreads and adheres better, acts quicker, lasts longer, and costs less than ordinary spraying powders."

Follow the lead of expert gardeners and growers, who have proved that Pestend Superfine (especially when mixed with lime) is a sure protection against crop-destroying insects. Pestend Superfine Tobacco Dust is non-poisonous to plants, inexpensive, and easy to use. Try it out yourself!

Obtainable in 4 lb., 28 lb., and 1 cwt. bags at all produce stores, or direct from W. D. & H. O. Wills (Aust.) Ltd.

THE MARKET GROWER

OFFICIAL ORGAN OF THE MARKET GARDENERS AND FRUITGROWERS' SOCIETY OF VICTORIA.
ALSO OFFICIAL ORGAN OF THE KOONDROOK & BARHAM TOMATO GROWERS' ASSOCIATION.

acreage and Production Last Two Years Compared

Study of the latest figures released by the Victorian Government is interesting as a comparison of production of various varieties between 1935-36 and 1936-37. Including grains, grasses and peas, Victoria has a total acreage under agri-

cultural cultivation of 6,887,241 acres, of which land in fallow is 2,483,163 acres; this represents an increase of 90,000 acres in 1936-37. The following table shows comparative area and production of the varieties stated. * indicates figures not yet available.

	Area (Acres).		Production (Tons).	
	1935-36.	1936-37.	1935-36.	1936-37.
Potatoes	44,287	45,911	104,125	*
Cereals	5,441	5,982	26,143	*
Wheat	77,795	72,837	96,155	88,070
Oats	926,293	940,058	1,055,747	1,069,358
Lucerne, Barley, etc.	36,998	36,737	57,098	56,482
Grass	99,275	131,980	137,953	189,139
Green Fodder	111,056	100,870	*	*
Orchards	41,081	41,658	*	*
Market Gardens	75,788	76,299	*	*
	20,633	20,795	*	*

VICTORIAN POTATOES.

Queensland Embargo Removed.

Following negotiations that have been proceeding between the Victorian and Queensland Departments of Agriculture, Queensland has now agreed to accept Victorian seed Potatoes carrying not more than 33 per cent. of the Rhizoctonia disease. This permit has cleared up a position that has been embarrassing for some time owing to Queensland rejecting commitments of Victorian seed Potatoes. The decision follows the visit of a Queensland officer to Victoria and a check-up of the possibility of the disease spreading to Queensland being restricted.

46,000 ACRES OF POTATOES.

Increase Since Last Year.

The latest estimate of the Victorian Department of Agriculture is stated to be 46,000 acres for the current season. This compares favorably with the 44,287 acres reported last year. The Department's estimate is compiled from reports received from 100 correspondents in all the important Potato growing districts in the State, and can therefore be taken as a reasonable expectation. An average yield of five tons per acre is predicted. Frost damage in some districts lowered the expected yields, but this has been balanced by yields turning greater production than was first expected. Disease conditions have fortunately been small, and the quality is above the average.

A £2,250,000 INDUSTRY.

Victoria's Market Gardening.

When the average housewife can buy fresh green vegetables at the ridiculously low prices so often ruling, it is not generally appreciated that the market garden industry is worth £259,427 gross value to the State. If it is so, and after deducting dilapidation, selling commission and other marketing expenses, there is an amount of £2,029,831 returned to the growers every year. It takes a lot of three-ha'penny cabbages or Carrots to make £1,000,000, yet the great army of market gardeners are contributing to the wealth of the State as well as to the larders of its entire population.

DISPOSAL OF WASTE FRUIT.

Value of an Insect-Proof Pit.

"It may be of interest to you to know that I find the Fruit Fly pit (with standard cover) a great success, and a saver of time and labor. In previous years I have burnt, boiled or buried all the waste citrus fruits, and such methods are costly and laborious. The rapidity and ease with which the fruit can be disposed of soon pays for the initial cost of the pit."

The foregoing extract from an orchardist's letter to the N.S.W. Department of Agriculture refers to the insect-proof pit recommended by the Department as the best means of disposing of waste and fly or moth-infested fruit.

Canada imported 15,300 tons of Tomatoes last year. Consideration is being given to Canada as an export outlet for Australian Tomatoes. At present U.S.A. supplies most of the imports; her contribution last year was 5,700 tons.

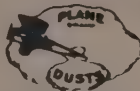
A SWING TO VEGETABLES.

By N.S.W. Orange Growers.

A report from Gosford states that a new industry has been developed in the district which has great possibilities, i.e., vegetables for the Sydney market trade. A few years ago vegetables were considered only as a side line to the growing citrus industry; now they have become an important factor in the district's production, and rapid expansion is proceeding.

The soil is eminently suitable, and with the adoption of the latest methods, an excellent livelihood can be made. The proximity of the district to both Newcastle and Sydney favours market growers. Decided opportunities for glass-house culture are also said to be possible. Already the cultivation of Asparagus has been satisfactorily undertaken, and staked Tomatoes thrive very well.

Hundreds of acres of staked Peas are now seen in season, and early Bean-growing has been found to be profitable. Certified Bean seed has created a demand, and has already benefited the district. Cucumbers, Cauliflowers, Cabbages, Marrows and Swedes are reported to grow well.



"Plane" Brand Dusts

"Beauty" (Knapsack) Dusters
"Superior" (Rotary) Dusters

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395 Queen Street
MELBOURNE

VEGETABLE BRIEFS.

Kern County (Calif.) is reported to have produced 3,050,240 sacks of Potatoes on 11,292 acres in 1936. The value of the Potatoes was £1,372,600; 18,000 acres will be planted this year.

Early Cantaloups in the Imperial Valley (Calif.) were wiped out by the recent excessively cold weather, and have had to be entirely replanted.

The average Pea crop in Idaho is 17½ bushels to the acre. In 1936, however, only 13 bushels were reported.

Fifty farmers in the Anderson Valley, Shasta County, Calif., have signed up to grow 100 acres of Soya Beans this year.

150,000 cases of vegetables is the aim of growers in the Lake County, Calif., for this year. If reached, it will constitute a record for the county.

The California estimate of the Asparagus acreage this year will be 38,000 acres. Since 1929 California has produced all the canned Asparagus used in U.S.A. as well as about 45 per cent. of the fresh supplies.

In the San Fernando Valley this year, they expect to harvest vegetable from 25,000 acres.

Last year, Gray's Harbor County, Wash., planted over 2,000 acres of Peas. This year they anticipate harvesting from 2,500 acres.



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Export & Commercial News

Improvement in Fruit Shipping

Solid Stacks of Cased Apples, Without Dunnage in Ships Hold ∴ Special Air Circulation Necessary

Commercial Experiment in M.V. "Port Jackson."

CONSIDERABLE INTEREST was aroused throughout Australia in the stowage experiments which have been made in the M.V. "Port Jackson," which sailed from Melbourne for U.K. on April 16.

Briefly, the method adopted is the solid stacking of the cases of Apples in the holds, thus doing away with dunnage between the cases, although the customary floor dunnage is retained, and in so doing providing for increased storage space. The scientists in charge hold that there will be a better outturn of the fruit under this system. The increased stowage space, because of the absence of dunnage, is about 4 per cent.

The experiment was under the control of Dr. A. J. Smith, of the Cambridge Low Temperature Station, and he had associated with him on the voyage, Mr. H. J. Shepherd (Cambridge) and Mr. G. Mann, of the Ditton (E. Malling) Laboratory.

It must not be assumed that this new system is capable of general application. Only certain new types of ships are suitable—those with a specially arranged air circulation system. The test is limited to Apples only.

THE EXPERIMENT is on commercial lines, and the general placement is as follow:—

Apples.

No. 2 Hold: 47,500 cases Apples from Beauty Pt. and Hobart.

No dunnage; 40 electrical thermometers.

No. 3 Hold: 39,500 cases Apples from Beauty Pt. and Hobart.

Dunnage; 40 thermometers.

No. 5 Hold: 18,000 cases Apples from Tasmania.

No dunnage; 20 thermometers.

Pears.

All the Pears are dunnaged. Records, however, are being kept as follow:—

No. 3 Lower Tween Deck: 12,000 Pears, Melbourne.

Dunnaged; 40 thermometers.

No. 5 Lower Tween Deck: 14,000 Pears, Tasmania.

Dunnaged; 20 thermometers.

Emphasis needs to be laid on some points that have sometimes been misunderstood — more particularly regarding the omission of dunnage in ships' holds.



M.V. "Port Jackson," at Port Melbourne.

Arising out of scientific investigations, at Cambridge, and the results obtained in the experimental hold at the Ditton Laboratory (where there is a chamber of some 15,000 cu. ft. capacity, holding about 130 tons of fruit, under conditions comparable with those on board ship), the investigators were led to make two proposals about the stowage of Apple cargoes:

(1) That in holds cooled by overhead grids and natural convection — in holds, that is to say, using the "grid" system, without fans — it seemed preferable to provide large vertical air-shafts at intervals, rather than to provide more numerous, but correspondingly smaller, crevices be-

tween the individual cases (these latter being already provided accidentally, by unavoidable irregularities in the stowage, and by the bulge of the case, and so forth). This was the so-called "tower" system of stowage. It was only suggested for one particular type of hold—the hold cooled mainly or solely by convection currents from overhead brine-pipes.

(2) That in holds cooled by forced air circulation,

with a vertical direction of air-flow and with rapid circulation (at least 25 changes an hour), no advantage occurred, so far as the British experiments could show, from the use of dunnage inside the fruit-stack—in fact, slightly better results were obtained without it. This was the so-called "No dunnage" method of stowage—about which the following information will be observed.

∴ ∴ ∴

THE FIRST EXPERIMENT omitting dunnage from a stack of Apple cases cooled by forced air-circulation, was made in the experimental hold in the season 1933, and gave good results. Since that time, dunnage has consistently been omitted in the experimental hold, and the results have been consistently satisfactory. (It must be remembered in this connection that at the Ditton Laboratory the fruit remains in the experimental hold, for a "voyage" period of about six months — not merely of six weeks.)

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ash Scientists (left to right)—Mr. G. Mann (Ditton), Dr. A. J. Smith (Cambridge) in charge, Mr. H. J. Shepherd (Cambridge).

In 1935, the first commercial shipment of Apples without dunnage was made from New Zealand in 'tween space. The scientists made observations of the temperatures in the holds during the voyage, or of the temperature of the fruit, which was quite satisfactory. In 1936 the scientists went a stage further, and a lower temperature was carried from New Zealand without dunnage—again with special temperature and measurements, and special examination of the fruit.

Now, with all this accumulated experience, these investigators feel justified in recommending the system as practicable and satisfactory, for the cargoes, carried in holds of the type mentioned—with vigorous circulation, in a vertical (as distinct from a horizontal) direction.

holds of this type have only recently been constructed—in fact, they are another outcome of scientific experiments and results in the experimental hold—but they are characteristic of all the ships built for the Australian and New Zealand trade in the past two or three years: that is to say, they are characteristic of about ships in the trade.

The investigators have not suggested the omission of dunnage in holds of any other type than these. Moreover—and this is important—Cambridge and Ditton scientists have not made any experiments with apples packed in the Victorian flat bushel case. They have usually employed the "standard" or "Canadian" type of Apple case, which packs with bulge.

For one year's experiment, however, holds were filled with Apples packed in cases of the Tasmanian "amp" type (these cases had to be specially made in England, and specially packed, rejecting any cases that showed more than a half-inch bulge). The results with this type of case and no dunnage were still quite satisfactory, for Apples, held for months. But so far no experiments at all had been made with the Victorian flat bushel case for Pears, and the scientists have not made any commendation for the omission of dunnage in holds stowed with this type of case.

AN EXAMINATION of the methods employed was afforded to a representative of the "Fruit World," while the "Port Jackson" was at Port Melbourne.

Specially constructed thermometers were placed at 40 different points in each hold—which means, of course, that tests can be made of the temperatures right through the stacks of apples. In the scientific experiments leading up to this commercial test, stated Dr. Smith, it had been noted that, contrary to general belief, there was more even temperature throughout the holds (and necessarily right at the centre of the solid stack) than where dunnage had been used.

In the control room there is a circular disc on which is recorded at intervals notice the temperature in the

40 different parts of the ship's hold. A maze of electrical equipment was observed, this experiment having been planned many months ahead, and the electrical testing equipment specially constructed for the present observational purposes.

While at Melbourne the fruit loaded at Hobart was methodically tested, all information being recorded on a daily chart. It was pleasing to know that the temperature in the no-dunnage chamber was being evenly reduced to the required degrees.

This experiment was conducted by the Cambridge Low Temperature Station (which is part of the British Food Investigation Board), the Ditton Laboratory, the Commonwealth Council for Scientific and Industrial Research.

The Australian Apple and Pear Export Council facilitated as far as possible the work of the scientists.

Dr. Smith speaks most appreciatively of the courtesy of the owners of the Port Line of steamers. Not only were free passages provided for the scientists, but in every way generous assistance was rendered in making the experiment possible.

While loading at Melbourne it was noted that the ship's holds were stowing even better than anticipated, and consequently more Pears could be taken. Messrs. Gibbs, Bright & Co., Victorian agents for the line, showed commendable energy in providing for as much as possible of the additional available space right up to the time of the sailing, for which appreciation was expressed.

Ocular Demonstration.

A small boy asked his father how wars began. "Well," said his father, "suppose that Britain quarrelled with France—"

"But," interrupted the mother, "Britain mustn't quarrel with France!"

"I know," he answered, "but I'm taking a hypothetical instance."

"You are misleading the child," said the mother.

"No, I am not," he answered.

"Yes, you are."

"No, I am not."

"All right, dad," said the small boy, "I think I know how wars begin."

The Marketing of Fruit and Vegetables

N.Z. COMMITTEE RECOMMENDS ESTABLISHING A PRIMARY PRODUCE MARKETING DEPARTMENT WITH DIRECTOR OF MARKETING AND COMMITTEE OF GROWERS AND DISTRIBUTORS.

(Summarised Report by our New Zealand Correspondent on the recommendations of the Committee set up by the New Zealand Government to investigate the sale of Fruit and Vegetables within the Dominion of New Zealand.)

WHILE AUSTRALIAN READERS will probably not be greatly interested in a report which deals entirely with New Zealand problems, it is only natural that many of the troubles in New Zealand have their counterpart in the Australian States.

The Committee spent altogether three months in taking evidence in the various centres of both production and disposal, and the report covers practically every phase of the fruit and vegetable industry from production to final disposal through the retail channels.

In a summarised report such as this, it is difficult to do justice to the many interesting points which have been brought to light by the work of this Committee. We do not propose to deal with every phase to which the Committee has given attention, but rather to review the recommendations, which in certain respects are drastic, and from the practical standpoint will be rather difficult to bring into operation.

The Committee recommend that the marketing of all horticultural products should come under control of the Primary Produce Marketing Department with the extension of that legislation to give effect to this recommendation. Also—the appointment of a Director of Fruit Marketing; the setting up of a Committee comprising growers, brokers and retail representatives; the establishment of district marketing authorities for the purpose of direction and control where deemed necessary by

the Director of Fruit Marketing, and the bringing of all fruit under compulsory standardisation. The most outstanding provision under this heading is that of compulsory standardisation, and the prohibition of the sale of any fruit under the standards fixed, other than to by-product factories, this prohibition to be carried through to the retail sale.

The Commission gave special attention to the stone fruit industry, and have made more or less similar recommendations to those governing Apples and Pears, but with various additions included in which is a recommendation that the Government finance the erection and equipment of cool stores in the Central Otago district, and that the fruit of that district be brought under the control of one authority in Otago.

Dealing with Citrus (principally Lemons), the Committee have recommended that this also be controlled and a

Citrus marketing authority established consisting of grower representatives from the three main districts, plus two grower representatives appointed by the Minister of Marketing. It has also been recommended that the Bureau of Industries should finance the erection of a curing shed in the Gisborne territory.

The small fruit industry, the Tomato industry, green vegetables, Potatoes and Onions all came in for a certain amount of attention. The Government has already dealt with the Onion position and, so far, without

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CITY FRUIT MARKETS, SYDNEY

very much success, as the institution of grading standards has found many growers unprepared, and there is at present a dead-lock between the growers and the merchants owing to the fact that a minimum price has been fixed with a maximum commission to the selling agent of 7½ per cent., which according to reports, the trade consider too low for the risk involved.

Citrus: That part of the Commit-

tee's report dealing with imported Oranges will be of interest to Australian readers. In its report, the Committee express the opinion that the alleged scarcity of Oranges in New Zealand has been greatly overstated. They then go on to examine the situation and to substantiate their opinion, they quote figures of importations, etc.

According to the report, the aver-

age importation from 1930/36 has been 270,000 cases annually. In considering these figures we should emphasise that New Zealand's production of Oranges is practically nil.

The Committee has claimed that the scarcity is not substantiated by figures. This, in our opinion, depends on the basis of comparison.

According to a recent Year Book, the total Australian production of

Oranges is quoted at 4,800,000 boxes and this for a population of approximately 6½ million represents over two-thirds of a case of Oranges per head of population. New Zealand on the other hand, with a population of 1 million, has available 1/5 of a case of Oranges per head of population. Perhaps from this, our Australian readers will realise what a wonderful market there is in New Zealand for Australian Oranges, providing the fruit can be made available at a reasonable figure.

The Committee dealt with a number of side issues in connection with the Orange situation, but in using figures for the past six years to prove that there was no shortage the season just closed, they seem to have ignored the fact that Oranges are every year becoming more of a necessity in the daily diet, and the demand of six years ago is no indication of to-day's possibilities.

The extent of the present shortage is indicated by the price which was recently paid for Californian Oranges in the Dunedin market — best size went to 87/6 per box, whereas practically at the same time Californian Oranges were realising 37/6 to 40/- in the Sydney markets. Presumably California values in Sydney were kept to that level by the competition of locally grown products.

Since the issue of the Committee's report numerous letters to the editor have appeared in the press of the Dominion, the tenor of which is wholesale criticism of the Government's methods in handling the situation. If this present agitation continues, the New Zealand Government will have no alternative but to lift the embargo on Australian citrus, irrespective of the Australian Government's attitude on New Zealand potatoes.

The Wholesale Trade.

Dealing with the wholesale section of the trade the Committee has recommended to the Government that some steps should be taken to reduce the number of wholesale merchants, each of the main centres other than Auckland.

Their recommendations sound quite logical, as it is obvious that if the Auckland City markets can handle the trade for a population of 220,000 people by means of three broker-firms, there is really no necessity in Dunedin with a population of 89,000 people to have seven wholesale contributors.

Judging from the report the Committee consider that the wholesale fruit markets of New Zealand, other than Auckland, are too decentralised for effective work, and are also out of date, and they have recommended that the municipal authorities in Wellington, Christchurch and Dunedin should establish a proper fruit market.

The difficulty we see in these recommendations is that most of the firms in these centres have over a period of years, established a business with a definite goodwill, and have invested considerable sums of money in buildings and equipment. The Committee evidently recognise this, as they suggest in one part of their report, that time should be given for these firms to make the necessary arrangements to dispose of existing premises, etc., etc. However, we fail to see how it will be possible by legislation, etc., to amalgamate by other means reduce the number of merchants to three.

As far as Wellington is concerned, most of the merchants are also handling other lines of business. Whether any serious effort will be made to carry the Committee's recommendations into effect remains to be seen. The Committee state that their investigations did not disclose any undue profits by any of the wholesale firms engaged in the trade.



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tail: A considerable portion of report under this heading is de- to the necessity of vigorous en- ment of the recommendations re- ing inspection, not only in re- to the fruit itself, but on the er of the retailers' profit on cer- fruit. The Committee have em- investigation has been made and recommendations formulated a view to reducing the price of to the consumer, and at the same securing to the producer a bet- return for his labor.

o achieve the object of lower es to the consumer they have re- mended the reinstitution of the ow trade, which at one time was e a feature in some of the centres opulation, but which was disco- ed many years ago. In Wellin- the sites for these barrows were ioned by the City Council, and at ain times of the year very high aiums were paid for the most eed sites.

he Committee refer to this, and it out that such a policy by the icipalities is entirely against the ciple of selling fruit from the ows, which was originally intro- d with the object of cheapening t to the public, whereas the suc- ful tenderers for the sites were ffect paying a comparatively high rental.

Fixing of Retail Profits.

he Committee recommend that maximum retail profit on the esale price of all N.Z. Apples, rs and citrus fruits should be ted to 33 1/3 per cent., and that the slers' profits on imported Bananas other citrus fruit be the same, the exception of the Cook Islands ges on which a 40 per cent. pros to be allowed.

n examination of this recommen- on shows the scheme to be im- ticable in the height of the fruit on.

ake present-day market prices -- this is considered to be a good on because of light production-- l quality Jonathans can be sed at 4/- to 5/- per case, and first- s Delicious at 5/- to 6/-. Taking higher price, 33 1/3 per cent. means per case, which is the retailers' it in handling the fruit into his o, exposing for sale, weighing, ging, etc. If this recommenda- is put into operation we are id that the retail fruiterer will n a more serious position than the ver. We understand that the ob- of the Committee's recommenda- s is to encourage the retailer to

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Davey St., Hobart, Tasmania.

loch Bros. Pty. Ltd., Market-place,
obart, Tasmania.

s & Lehman Ltd.—Sole Representa-
es for New South Wales, Queens-
nd and South Australia.

buy the highest quality fruit at the highest price so that he will secure a worth while return for the labor in- volved.

It would be interesting to know if the Committee tried to find out the average turnover in cases of the average retailers.

With a fluctuating market — and fruit does vary from day to day — the inspectors to be employed to check up the operations of retailers will have a very difficult job in determining which fruit was purchased at 5/- and which at 10/-. Tracing back on auctioneer's records would be no small job.

Judging from certain parts of the report one is forced to the conclusion that the Committee consider that there are too many retail shops in New Zealand, and it is only by the elimination of quite a number of these, with a corresponding increase in turnover of those remaining, there is any chance of securing a voluntary reduction in the retail price of fruit. Perhaps the barrows would force a number of the retailers out of busi- ness as they could undoubtedly sell fruit at a very much lower price if they were paying only a nominal fee

for their barrow license, particularly as shop rents in any of the main centres are very high.

It is proposed to license all fruit retailers, the Marketing Department to be the licencer. Evidently a fee would be charged for the license, and according to the report, the qualifica- tions to be as follows:

The matter of experience in the business or a knowledge of fruit and its uses and seasons should be taken into account in connection with the issue of fruit retailers' licenses to applicants not already established in the business.

It therefore seems that everybody in the business to-day would get a license, but anybody else wanting to start would have to satisfy the De- partment as to their capabilities.

The licenses to be both personal and in respect to definite business premises and if the license should lapse or be cancelled for any reason the Marketing Department should decide whether another li- cense should be issued in its place.

This will certainly be one way of reducing the number of retail fruit shops which are always changing hands.

The Committee have released some very interesting information which shows that in the four main centres, that is, Auckland, Wellington, Christ- church and Dunedin, there are 1,075 retail shops. On these figures we would calculate that provincial centres and country districts would provide a similar number so that New Zea- land has almost as many retail fruit shops as it has commercial growers.

This multiplicity of shops is prob- ably only the result of the depression years, and with good times a number of the present proprietors will go back to their previous callings, and gradually the number of shops will be reduced to normal figures by natural laws. Fruit retailing is not so attractive that a man will continue at \$4 per week if he can earn \$6 at his usual vocation.

Considerable space is devoted by the Committee to Asiatic competition, and there are some humorous refer- ences to the ability of a certain sec- tion of the Chinese retail trade to disappear, owing quite considerable sums to the merchants, only to open in business elsewhere under another name. It is common knowledge that the European finds great difficulty in distinguishing one Chinese from an-

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BRISBANE

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Victoria: Harcourt Fruitgrowers' Progress Assn. Ltd.
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Tasmania: State Fruit Advisory Board.
New South Wales: Griffith Producers' Co-op. Co. Ltd.
Batlow Packing House Co-op. Soc. Ltd.

other, and evidently a certain section of the Asiatics trade on this feature.

Instances are quoted where Asiatic market gardeners have secured advances from merchant firms, and when crops were ready to harvest another Asiatic is found in possession, who has no knowledge of any commitment made by his predecessor, and of course, is absolutely ignorant as to the previous owner's whereabouts. To overcome some of these troubles the Committee threw out the suggestion that finger prints be taken of all Asiatic fruiterers and market gardeners, as they considered this was probably one of the only ways the authorities could check the evil.

Another complication seems to occur in retail shops in which Asiatics work long hours, which they are perfectly entitled to do if they are the owner. Seemingly, whoever is on duty at the shop at the time is the owner.

By living on the premises and by employees working long hours, the Asiatics are able to conduct their business on a very much lower price than the European, and as the price at which the Asiatics sell fixes the price which the public will pay, the European finds it most difficult to secure a living. The Committee have therefore recommended that the Government insist on proper recognition by the Asiatic of the Labour Laws of the country, and their recommendations regarding finger prints are to enable the inspectors to see that the laws are observed.

Since the report was released, one newspaper has interviewed a Chinese retailer, who states quite emphatically that he approves of finger prints in connection with crime, but for commercial reasons—No! The Chinese Consul for New Zealand has expressed strong disapproval of the recommendation.

Summary.

It is quite obvious from the silence of the fruit trade since the issue of the report that it is taking some time to assimilate all the recommendations of the Committee.

It is sufficient to say that the Committee have carried out a very difficult job thoroughly, and have made a report which must be of interest to everyone connected with the production and sale of fruit. We doubt, however, if it is humanly possible, for all the Committee's recommendations to be brought into practical operation within a period of years. There may be many abuses which can be corrected by regulation, but to suggest that any one marketing authority can possibly control the fruit trade of the Dominion in all its avenues at a cost which would not be absolutely prohibitive, is, we believe, attempting the impossible and will most likely lead to absolute chaos.

In our opinion the result aimed at can be achieved more quickly and with much less disturbance of trade generally, if the money which it is proposed to spend on inspection, organisation, etc., was devoted to a really solid advertising campaign, de-

signed to very considerably increase New Zealand's fruit consumption.

An increase of consumption would increase the wholesale and retail turnover with benefit to both, and possibly allow of slight lower prices, at the same time giving considerable benefit to the health of the New Zealand public.

.. .. .

Later: There have been interesting developments in connection with the importation of citrus fruits. It is no exaggeration to say that the newspapers of the Dominion have given considerable prominence to the shortage of citrus, and the resulting agitation which has been fairly widespread seems to have imposed on Government circles the necessity of meeting the demands of the people.

A Government statement has recently been issued authorising the importation of 180,000 cases of South Australian Oranges between May and November next. Reference is also made in the statement that the Cook Islands will supply 90,000 cases in the same period. The question now arises as to whether South Australia will be able to provide the quota which has been granted. In fruit circles here it is understood that South Australia is developing a good market in England for its well-known Navels, and to cater for this trade and the 180,000 allotted by New Zealand will be just a little beyond the present capacity of the South Aus-

tralian supplies. Reports to hand in New Zealand indicate a very much lighter crop of Navels throughout Australia, but a normal crop of Valencia, part of which, from present appearances, will certainly be required in New Zealand towards the end of the year.

In the statement released by the Government the official importation figures for the past few years have been supplied and they are as follows:—

	Cases.	Bushels
1929	242,197 ..	363,299
1930	278,846 ..	418,261
1931	292,294 ..	438,441
1932	268,130 ..	402,195
1933	200,877 ..	301,315
1934	281,907 ..	422,860
1935	270,221 ..	405,331
1936	325,535 ..	488,302

The present extreme shortage has largely been caused by the frost damage in California, and the hold-up in shipment occasioned by the Pacific Coast strike. Californian prices are high, but once the South Australian fruit commences to reach the New Zealand market the present luxury prices should be replaced by supplies which will not be at a cheap figure, but will be within reason.

Apple Export.

Unlike Australia, New Zealand has been well below the anticipations of official quarters, and while the season's figures have not yet been published it would seem that 900,000 cases to all markets will cover the Dominion's total. Nelson, the mainstay of the export trade, will have difficulty in reaching 600,000 cases.

Cabled prices indicate a strong demand in London, with Jonathan showing in a very favorable light as compared with previous years. As far as New Zealand is concerned, Jonathan is an export Apple only. The local demand is poor, and fortunately, Jonathan are a good Apple in that they are a regular clean cropper, and the percentage of export rejects is on the average, lower than any of the other export varieties. As Jonathan are the only variety which have shown a full crop this year, the good returns from the London market will be very pleasing to growers.

Reports from Sydney give no encouragement of a continuation of the small export trade in New Zealand Delicious commenced two years ago. From the surplus available from Tasmania and Victoria, it would seem that Sydney prices will remain at a fairly low level, whereas it is expected that export quality Delicious will bring substantial prices once orchard-held stocks are cleared. Stocks of Apples held in the orchards are particularly low for this time of the year, and it is fairly obvious that cool stores will have to be drawn on for supplies about two months earlier than usual. Wellington stores are practically full, and it is estimated Wellington stocks are 30,000 cases above normal. This surplus is offset by the shorter holdings in other parts of the North Island.

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Hobart.

Market Notes and Prices

SYDNEY MARKET REPORT.

For Month of May.

HE period under review is one in which business assumes importance only upon the Mon-afternoon and Tuesday morning, when Tasmanian deliveries create a le competition amongst buyers. The rest of the week trains of fruit m various N.S.W., Qld. and Vic. tricts arrived in Sydney, and a pro- tion of the product moves out etly.

Interest centres around the Apple sition, crystallising itself into a yady demand for Jonathanss of cer- n selected counts, to the exclusion almost all other varieties.

There has been a consistent demand Packham's and W. Cole Pears, e former remaining at a steady el for large sizes, while the latter eadily improved in value for the all sizes. Reducing quantities of ananas and the Banana's Board even tribution enabled values to be abilised. Grapes practically finish- l. Values for M.I.A. Tomatoes im- oved after the over-supply eased May 17.

A feature of the month has been e rapid increase in the appearance e new season Oranges, chiefly avels, and also the higher values at have ruled for this fruit. Old eason Valencias definitely unwanted. eports indicate the crop to be light, nd early rains were wanted, in most postal districts at least, for fruit e mature normally.

Apples:

The demand was exclusively for onathans, agents having a difficult ask to persuade buyers that large omes, immature Scarlets, Sturmers, emocrats, French Crabs, colored ondots, and Cleos. were all avail- ble at lower values than the Jona- hans. At the time of going to press N.S.W. Jons. were mostly marketed, nd the bulk of arrivals had also ap- eared from N. Tas., while Southern asmania was forwarding steadily. N.S.W. Grannies had not experienced any particular demand, the best being some large-sized fruit from Forbes, which sold around 6/- and 7/-. Del- in particular request, fancy and good selling at mostly 9/- to 11/- when over 2½ in. in size. Small sizes n Del. Apples were neglected for Jon.

Some very choice Dels. arrived from Tas., and some fruit branded as such, but differing in shape and color from the N.S.W. product. Vic. arrivals were around 400 to 500 cases per week, while Tas. forwarded a total of 241,182 cases, an average of 48,236 cases per week. The accumula- tion of Tas. fruit from arrivals on May 10, indicated the need for re- duced supplies on the following week, and on May 17 arrivals were reduced to under 30,000 cases.

Prices (according to grades and sizes):—Cleo. (Tas.), 2/6 to 5/-; Del. (Tas.), to 10/-, N.S.W. 4/- to 12/-; Demo. (Tas.), 3/- to 5/-; Clarence (Tas.), 3/- to 4/6; F.C. (Tas.), 3/6 to 5/6; G.F. (Tas.), 3/- to 5/-; Grannies (Tas.) to 6/-, N.S.W. 4/- to 8/-; Jon. (Vic.) to 6/6, Tas. 4/- to 7/-; Jon. (N.S.W.), 4/- to 7/6; Londons (N.S.W. and Tas.), 2/6 to 5/6; Romes (Vic. and Tas.), 4/- to 5/6, N.S.W. 4/- to 7/-; Scarlets (Tas.), 3/- to 5/-; Sturmer's (Tas.) 3/- to 5/-; Tasma Pride (Tas.), 3/6 to 5/-. Shipping and extra fancy higher; domestic 1/- to 2/- lower.

Pears:

Even values have ruled, the excep- tion being such remnants as the last of the Beurre D'Cap., Keiffer, N.S.W. Howells and similar unwant-

ed types. Packham's and W. Cole were at all times wanted, while sound B. Bosc and Glou Morceau from Tas. and Vic. and Howell from Vic. sold well. Jos. were a little before their time, and W.N., as is customary, were usually suspected. The 2½ in. or count 198 W.C. is now to 11/4 and 12/-, and likely to remain firm, while large sizes in Pack. of fancy as well as Ex. F. grades are selling freely to 10/-. Prices (according to grades and sizes):—Bosc., Tas. to 6/-, N.S.W. and Vic. 4/- to 6/-; G.L.M., Tas., 4/6 to 7/-; Howell, Vic., 5/- to 7/-; Jos., N.S.W. and Tas., 5/- to 8/-; P.T., N.S.W. and Vic., 6/- to 10/-; W.C., Tas. to 9/6, N.S.W. 6/6 to 11/-; W.N., N.S.W. and Vic., 4/- to 7/-. Shipping and extra fancy higher; domestic 1/- to 2/- lower.

Bananas:

Approximately 44,500 tropical cases of Bananas have been consumed in N.S.W. during the period under con- sideration, an average of just under 9,000 cases per week, 7,700 for Syd- ney and environs, 250 in Broken Hill and 924 in Newcastle. Even distri- bution stabilised prices at 17/- to 23/- trop. case, with specially select- ed country order fruit higher.

Custard Apples:

These increased in quantity from about 600 half cases per week to over 1,100 half cases. Cold weather militated against increased values, and prices mostly from 4/- to 5/- per half case, with a few higher.

Citrus Fruits:

Grapefruit.—This has been avail- able from U.S.A., Palestine, Q'land, and early season fruit from N.S.W. New season N.S.W. fruit has been very light in weight, and values nominally at 4/- to 7/-, with occa- sional sales to 9/- bush. The Pales- tine fruit mostly sold to 35/- per 1½ bush. case, latterly being reduced to 10/- to 15/-. The U.S.A. fruit was available at 40/- for counts 80 to 126, and 35/- for count 150 per Cal. case. The value of the U.S.A. fruit is now 35/-.

Lemons.—Prices: — N.S.W. Spec. and Stand., colored, 2/6 to 6/- bush.; plain grade, 2/6 to 4/-; inland, 5/- to 7/- bush.; Q'land, 9/- to 10/- bush.

Oranges:

Valencias. — These continued to arrive until the middle of May, values being maintained up to 12/- and 14/-

for the best fruit. The volume of new season Navels and Silettas in- creased to such an extent that Valen- cias were no longer required.

White Silettas.—At the end of April these were selling up to 8/-, and many hundreds of cases were sold due to the high color of this type, values now being 2/6 to 5/-, with a few to 6/-.

Navels.—These appeared early in April, and since that date increased considerably. Artificially colored fruit recently sold to 10/-, but has recently eased, due to supplies being much larger. Many arrivals from irrigation areas have been Thomp- son's, of excellent appearance, counts 150 to 163 achieving the highest price. Prices: — Navels, N.S.W. Special and Standard—Local, 5/- to 8/-, few 9/-; Inland, 6/- to 9/-, few 10/- bush.; plain grade, 5/- to 7/-; Q'land, 15/- bush.

Mandarins:

Prices:—N.S.W. Special and Stan- dard—Emperor, counts 160 to 220, 7/- to 8/-; counts 240 to 270, 6/- to 8/-; counts 280 to 350, 4/- to 6/- bush.; Q'land, 18/- bush.

Cables—Monro, London

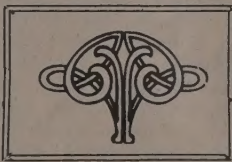
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We do not purchase.

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We have specialised in the Sale of Australian Apples and Pears by expert salesmen for many years past, and we have the largest and best customers in Great Britain amongst our clients.

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MARKET NEWS AND PRICES.

(Continued.)

Pineapples:

Arrivals from Qld. totalled 8,530 trop. cases, an average of 1,700 cases per week, quality generally being good, with very little water blister showing. Prices, 8/- to 15/- trop. case.

Strawberries:

The first commercial quantities appeared during the last few days, the fruit coming from Q'land, and not of the best quality. Prices, 5/- to 8/-, with a few to 10/- per tray.

Tomatoes:

End of April deliveries were very heavy from the Murrumbidgee Irrigation Area, and Mangrove-Mountain-Kulnura and Glenorie districts. Portland (Victoria) also forwarded. Values were approximately 2/6 to 5/- half bush., and prices continued so until cold weather reduced supplies about May 17, when values improved 2/- or 3/- ½ case. Bowen (Qld.) is expected to commence forwarding in the near future. N.S.W., green, 3/6 to 5/-; special colored, 6/- to 7/-; few 8/- half case. Repacked, 6/- to 8/- half bush.—L. T. Pearce, Market Representative, Fruitgrowers' Federation of N.S.W.

VICTORIA.

Market Report for May.

WITH Valencia finishing and Navels coming in, movements at the Wholesale Markets improved slightly during May. Portland Tomatoes practically finished at the end of the month, and Queensland shipments are still due.

Citrus.—Navel Oranges came in strongly towards the end of the month. They were generally well matured, and Mildura shipments were naturally coloured, allowing tests to be lifted. Other localities were still gas-colored, and inspection was maintained. Grapefruit supplies were heavy in the last fortnight, with low prices and slow movement, demand was light. Very few Californians were seen. Lemons: Small and inferior samples were hard to quit, but a good demand was experienced for good quality fruit, of which the supply was satisfactory. Mandarins had a keen demand, with short supplies owing to a light crop.

Apples.—The demand for prime samples improved during the month.

Pears were about normal, with a fair demand for good Packhams. Other varieties were slow.

Grapes almost closed out. A few Walthams were in good demand, and Ohanez brought good prices for the season.

Passion Fruit were not as good as usual, being on the small size, but of good quality, demand very ordinary.

Tomatoes.—Victorians finishing, but sold well at favourable prices.

Bananas sold well at satisfactory prices.

Celery.—Plenty of S.A. to hand. Sales slow, but prices normal.

Pineapples sold well. Supplies were short and the demand fairly strong.

Melbourne (4/6/37).—The wet, cold weather has affected demand, and only small quantities sell. Supplies are not of a large volume. Prices were firm yesterday. Rates quoted by the Wholesale Fruit Merchants' Association were as follow:—Per Case: Apples, eating, 2/6 to 4/-, a few higher cooking, 2/- to 3/-, a few higher. Bananas, per double case, green, best, 14/- to 20/-. Adelaide Celery, 5/- to 8/-, choice higher. Grapefruit, Q'land, 4/- to 9/-. Lemons, good quality, 4/- to 8/-, few higher. Mandarins, 8/- to 12/-, few higher. Oranges, 7/- to 10/-, selected higher. Passionfruit, 2/- to 5/- half case, choice higher. Pears, 2/6 to 6/-, few higher. Pineapples, 9/- to 15/-, few higher. Tomatoes, 6/- to 14/-, few higher. Grapes, 6/- to 12/-, special Walthams higher.

QUEENSLAND.

Brisbane (21/5/37).—Messrs. Clark & Jesser report that the supplies of Apples and Pears have been heavy during the last month, and ruling values are as follows:—Apples: Jons., 2½ to 2¾ 7/- to 7/6, 2½ 6/- to 6/6; other colored Apples 6/- to 6/6; Cleo., 6/- to 6/6; G.S., 8/- to 9/-; Five Crowns and Alfr., 5/- to 6/-. Pears: W.C., 2½ and larger, 10/- to 11/-; W.N., 7/- to 8/-; Jos., 8/- to 9/-; Bosc., 5/- to 6/-; Packhams, 7/- to 8/-. Oranges: Siletta and Joppa, 9/- to 10/-; Navels, 10/- to 12/-. Mandarins: Emperors, 9/- to 10/-. Custard Apples: 3/- to 3/6 qrt. case. Lemons: 12/- to 14/- bus. Pineapples: Roughs, 8/- to 9/- case; smooths, 9/- to 10/-. Passion Fruit: 8/- to 9/- qrt. case. Tomatoes, 5/- to 7/-. Cabbage: 3/- to 4/- per doz. Cauliflowers: Large, 12/- to 15/- doz.; medium, 8/- to 10/-. Peas: 7/- to 8/- per sugar bag. Beans: 9/- to 10/-. Swede Turnips: 7/6 cwt. Pumpkins: 4/6 cwt. Potatoes: 6/- to 7/- cwt. Sweet Potatoes: 5/- to 6/- cwt. Bananas: 14/- to 16/- case.

Owing to dry weather during the summer months the Q'land. Orange crop is very light.

SOUTH AUSTRALIA.

Adelaide (28/5/37).—Apples (eating), 4/- to 7/- case; do. (cooking), 2/- to 4/-. Bananas, Q'land., 24/- to 28/-. Grapes (dark), 8/-; do. (white), 8/-; Lemons, 5/-. Oranges, navels, 8/- to 10/-. Passionfruit, 16/-. Pears

(eating), 6/- to 8/-; do. (cooking), 4/-; Pineapples, 18/-. Quinces, 3/- to 4/-.

WESTERN AUSTRALIA.

Perth (28/5/37).—Apples: Jon. dumps, 4/- to 12/- (special to 12/6); Dunn's, 2/6 to 6/6 (special to 7/-); R.B., 3/- to 6/6; Yates, 4/- to 10/- (special to 11/-); G.S. flats, 4/- to 5/-; dumps, 3/- to 8/-; Cleo. dumps, 2/6 to 7/9; Nickajacks, flats, 3/- to 5/-; dumps 3/- to 8/-; Del. dumps 8/- to 13/6. Citrus: Navels, flats, 2/6 to 7/-, dumps 3/6 to 8/- (special to 8/3), Val. flats 2/6, dumps 4/-. Lemons: 2/- to 7/- (special to 8/-). Mandarins: 2/- to 11/6 (special to 14/6). Pears, flats, 5/- to 8/6; dumps, 5/- to 10/- (special to 11/-). Tomatoes, 4/- to 15/- (special to 16/-, inferior from 2/-).

NEW ZEALAND.

Messrs. Reilly's Central Produce Mart Ltd. report, under date May 21, as follows:—This week has been a busy one. The market has been well supplied with most lines of fruit and fresh vegetables, Apples being in ample supply. Some very nice quality Del., Jons., and Sturmers are coming to hand. Unfortunately, second grade fruit is still in over-supply, and difficult to sell. W.C. and W.N. Pears are meeting with a good enquiry.

Hothouse Tomatoes have firmed in price, and Grapes are also realising good values.

The Australian Oranges ex the "Waitaki" arrived in excellent condition, and the supply was considerably over-booked, and orders had to be apportioned. Further supplies of Cals. ex the "Mariposa" will arrive per the "Waipiaata" next week, and Island Oranges are due at the end of the month ex the "Limerick."

Ripe Bananas have a fair enquiry. A further transhipment of green fruit ex the "Mapua" is due next week.

A small shipment of Pineapples ex the "Karetu" realised satisfactory prices.

Prices (Per Case).—Oranges: Cal. Vals., 47/6; Australian Navel Oranges, 16/-; Cal. Lemons, 65/-; Grapefruit, 45/-. Bananas: Ripes, 20/-. Pines: 26/-. Pears: W.C., 6/- to 8/6; W.N., 6/6 to 8/6; cooking Pears, 6/6. Apples: Choice Coxes, 9/- to 12/6; Del. 6/- to 8/6; Jons., 6/- to 7/6; G.S., 8/- to 9/6; Cleo., 6/- to 7/-; small and inferior grade desert Apples, 3/- to 4/6; cookers, 4/- to 6/-. N.Z. Lemons to 20/-. Per Half Case:—W.C., 3/6 to 6/-; W.N., 4/- to 5/6. Passion Fruit, 14/6 to 17/-.

SAFETY FIRST.

"Freddie" said teacher, "give me a sentence using the word diadem." "Yes," said Freddie. "People who hurry across railway crossings diadem sight quicker than people who stop, look and listen."

APPLE PRICES FALL IN LONDON

Pears Selling Freely.

LONDON, May 29.

Large quantities of Apples have been marketed this week, and prices are easier. Quotations in London are as follow:—

Tasmanian, ex the "Maimoa," "Somerset," "Port of Sydney," "Comorin," "Perthshire," "Otranto" and "Ceramic":—Cox's 7/6 to 14/6; Cleos. 6/- to 9/-; Jons. 5/9 to 8/-; Ribstons 3/6 to 8/-; G. Smiths 10/- to 13/-.

Victorian, ex the "Maimoa," "Perthshire," "Essex," "Port Jackson," and "Otranto":—Jons. 6/- to 9/-; Smiths 10/6 to 13/-; Dunns 8/- to 8/6.

New South Wales, ex the "Perthshire," "Essex," and "Empire Star":—Jons. 7/9 to 8/3; G. Smiths 12/- to 13/6.

Pears are in good demand at improved prices. Quotations:—Tas., ex the "Somerset," "Port Jackson," and "Port of Sydney":—Bosc. 8/- to 10/-; Nelis 9/- to 11/6; Packhams 10/- to 11/-.

Victorian, ex the "Otranto," "Essex," and "Port Jackson":—Nel. 13/9, Bosc. 8/9 to 11/-.

South Australian, ex the "Otranto":—Jos. 11/- to 12/3.

The Liverpool market has also been subject to heavy arrivals of Apple. Quotations:—

Tas., ex the "Ceramic" and "Maimoa":—Jons. 7/- to 9/-; Cleo. 8/- to 9/6.

Victorian, ex the "Turakina" and "Empire Star":—Jons. 7/- to 9/-; Cleo. 8/3 to 9/9.

ORANGES FOR NEW ZEALAND

In considering the New Zealand requirements of Oranges, Mr. Fagan, Acting Minister of Customs, stated on May 10 that arrangements would be made to import 180,000 cases from South Australia up to November next. If this increased quantity, with 90,000 cases expected from the Cook Islands, was insufficient for the normal average consumption in the Dominion steps would be taken to permit further increased importation. The Government would, however, watch that the price to consumers is not made unreasonably high.

"EAT A PRUNE."

If you're as blue as indigo

And you find it hard to smile,

If you think your life is empty

And to live is not worth while,

If consolation makes you worse

And you crave to ride a hearse,

Bear in mind this little verse,

Eat a Prune.

If your house is not insured

And it burns down to the ground

If you lose a million dollars

Where it never can be found,

If you're beat up by your wife

And your joys all turn to strife,

Take a brand new lease on life,

Eat a Prune.

If you love a lady madly

And someone beats your time

If you buy stocks at a quarter

And they drop down to a dime,

If you're so hot and dry

And you think you're going to die

You can live on if you try,

Eat a Prune.

For a Prune will knock a bunion,

It will stop your falling hair,

It's the milestone to comfort

From the road of grief and care

It is wholesome, it is cheap,

It won't perish, it will keep,

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AUSTRALIAN APPLES IN LONDON.

cial Opening of Season by Mr. S. M. Bruce.

The Australian Apple season was officially opened on Wednesday, April 14, by Rt. Hon. S. M. Bruce, Australian High Commissioner in London. At the request of the London Fruit Exchange, Spitalfields Market was this year the venue of the function.

Mr. Bruce was received by the Chairman, Mr. E. I. Simons, and members of the London Fruit Exchange Brokers' Association. He examined Australian fruit exposed in the rooms for inspection by prospective purchasers, and then went into the auction room, where the ordinary business of the Exchange was in progress, and where crowds of buyers, sitting in an amphitheatre of tiered seats, were pouring in an avalanche of bids to the rapid fire of the auctioneer's hammer.

The auction was interrupted while Mr. Bruce was invited to assume the role of auctioneer, and sell a consignment of Australian fruit, the proceeds of which were to be devoted to the Wholesale Fruit Trade Benevolent Fund and to the Poor Children's Country Holiday Fund.

The fruit sold was as follows:—4 days of Plums, 2 boxes Josephine Pears, 2 boxes Jonathan Apples, 2 boxes Worcester Apples, 2 boxes Cleopatra Apples; total, 12 boxes, which realised 135 guineas.

In advising of the foregoing, Mr. E. Hyland, London Director of Australian Trade Publicity, writes as follows:—

"We were successful in obtaining free editorial publicity in connection with this opening of the Australian fresh fruit season in some of the leading national papers."

"The appearance of Mr. Bruce on this occasion was of great assistance, and, indeed, his appearance always in Australian Trade Publicity matters. He is always most helpful."

VICTORIAN PEARS AND PLUMS IN ENGLAND.

According to a report received by the Director of Agriculture, Mr. H. A. Mullett, from the Victorian Agent-General in London, the 9,321 bushel cases of Victorian Pears shipped from Melbourne on the s.s. "Moreton Bay," arrived at Southampton in satisfactory condition. The varieties shipped were Packhams and Howells. The former were reported on arrival to be generally in green hard condition with odd cases green ripe. All were very clean and of good quality. The Howells were in green, hard condition, though some marks were in slightly forward to forward condition with some Pears ripe. As with the Packhams, all the fruit was sound, clean and of good quality. Packing and grading were described as satisfactory. The Packhams realised 12/6 to 13/-, and the Howells 11/- per case.

A shipment of 5,964 cases of William Bon Chretien Pears on the R.M.S. "Mooltan" was less satisfactory, the Pears arriving mostly in a very forward condition. There was a big variation from green hard to full ripe and over-ripe, with much fruit collapsed and useless. The prices realised ranged from nil to 12/- per case for good sound fruit.

A consignment of Plums on the same vessel arrived in more forward condition than those on the "Melbourne Star," there being more full ripe fruit and more wastage due to over-ripeness.

VICTORIAN PLUMS IN LONDON.

The Victorian Agent-General in London has reported on the out-turn of 5,811 half-bushel cases of Victorian Plums shipped from Melbourne during February on the s.s. "Melbourne Star." This steamer arrived at Royal Albert Dock on 18/3/37, after a journey of 39 days, and the Victorian fruit was discharged on the following day.

The consignment consisted principally of the Grand Duke and President varieties. There were also a few lines of Jeffersons, Green Gage and Coe's Golden Drop, and odd lots of Satsuma, Wickson and Diamond. Inspection on arrival showed that there was some variation in the condition and soundness of the different varieties, and also in the same varieties from different growers, due probably to the difference in the degree of maturity at which the Plums were picked, particularly in respect to the Grand Duke, President and Gage varieties. The worst conditioned Plums in the shipment were Satsuma, Wickson and Diamond — confirming the experience of previous years that these varieties are unsuitable for cold storage over the period necessary for their transport to the United Kingdom markets.

Generally the shipment could be classified as satisfactory, and was uniformly in better condition than any previous shipment of this fruit. This was due to the fact that growers and exporters had concentrated on exporting those varieties which proved the most successful during past seasons.

Taking the shipment as a whole, no fault could be found with the quality of the several varieties. It was to be expected that there would be variation in the color of the fruit, particularly in the dark Plums, and although the well-colored Plums sell more readily than those partly colored, the most important point to aim for is a firm and sound condition on arrival in the United Kingdom.

The Plums were packed in the half-long bushel and the half dump cases, and neither one has any advantage over the other, either from the condition of the fruit, or from a selling value. Grading was uniformly good and packing satisfactory. Part of the consignment was wrapped and part unwrapped, but neither practice appeared to have any influence on the condition of the fruit, although many buyers prefer wrapped fruit. Whilst some cases were neatly stencilled there were many instances of the stencilling having been applied with anything but care.

EXPORTS OF APPLES AND PEARS.

The Department of Commerce advises that up to April 30 this year there had been exported from the Commonwealth to all ports 3,712,198 cases of Apples and 664,848 cases of Pears. Corresponding totals last year were 3,712,198 cases Apples and 522,659 cases Pears.

FAULTY CARRIAGE OF PEARS.

Appeal by Shipping Co. Against Previous Decision Unsuccessful.

The Batlow Co-op. has been successful again in its legal case for faulty carriage of Pears per "Port Brisbane" to Hull, in 1934.

A verdict for £3,213 was gained by the Batlow Co-op. in an action tried at Cootamundra. The shipping Co. appealed against the verdict on the grounds that certain evidence was wrongfully admitted.

The appeal before the Full Court was dismissed with costs.

It is understood that the Shipping Co. has lodged a further appeal.

NEW PERSIAN GULF SHIPPING SERVICE.

Hadden & Co. Ltd., Batavia, shipping agents, have asked the Australian Trade Commissioner in Netherlands India, to bring to the notice of Australian exporters the inauguration of a new direct shipping service from Java ports to Bombay and the Persian Gulf.

The service may, it is thought, be of interest to Australians because it will provide the means of forwarding cargo from Australia into the Persian Gulf with only one transshipment (at Java) instead of the present two, at Colombo and Bombay.

Goods from Java for the Persian Gulf are usually taken by a British India steamer from Java ports to Bombay, and there transhipped to another British India steamer.

The service will be a joint one of the Silver Line Ltd., and the Pacific Java Bengal Line. There will be monthly sailing of ships calling at regular ports, and to other ports if sufficient cargo is obtained.

It is noted that there were many instances of the stencilling having been applied with anything but care.

QUEENSLAND.

Fruit for Sydney Markets.

During the 1936 season Queensland sent 27,000 cases of Bananas to Sydney, as compared with 25,400 in 1935. In the same period New South Wales districts sent to Sydney 589,000 cases and 715,000 cases respectively. These figures are given by Mr. Cunneen, Assistant Representative in Sydney of the Committee of Direction in the "Queensland Producer." With regard to Pineapples, the very dry conditions on the plantations resulted in fewer than in 1935 coming on to the Sydney market. About 148,000 cases were sent by Queensland in 1935, and 129,000 in 1936. Prices were good and for the first time for many years Pineapples were sold for £1, and even more per case. Water Blister caused losses to growers and distributors, especially during the warmer months. Almost the same number of cases of Papaws were marketed in 1935, and 1936 (12,000). Prices were slightly higher because of the excellent quality of the fruit.

A bad plague of grubs checked Tomatoes and short supplies were sent to the Sydney market, but prices were satisfactory.

The supply of Beans from Queensland was less than in 1935, and 1936 prices did not compare favorably with 1935.

Strawberries were up to usual standard, and about the same quantity was sent from Queensland to the Sydney market, 25,000 trays and 5,000 cases of boxes.

SOUTHAMPTON AS PORT.

A letter is to hand from Mr. C. F. Bevan, of Sydney (representative of Port of Southampton), pointing out the value of that port for quick and efficient delivery of fruit to London and other markets.

BUSINESS CHANGES.

Lee Fook & Co. (Edward Lee Fook), 13 Lackey-street, Sydney, fruit merchants, etc. On 10/3/37 William Y. Gee became a member. Reg. 11/3/37.

Kylwyll Watsonia Co., The (Robert Watson, Henry E. Richardson, and Noel K. Cooke), 123 Fox Valley-road, Wahroonga, manufacture of spraying compounds. On 17/3/37 Noel K. Cooke retired. Reg. 17/3/37.

SPECIAL NOTICE TO FRUITGROWERS

All Members under Fidelity Bond

In response to numerous requests from growers for information as to who are members of the Wholesale Fruit Merchants' Association of Victoria the following list is given. All are members of the above Association, and are registered firms carrying on business in the

WHOLESALE FRUIT MARKET, MELBOURNE.

STAND NUMBERS ARE AS INDICATED IN PARENTHESES.

T. STOTT & SONS (26).

H. L. E. LOVETT & CO. (23).

A. E. PITT (14).

J. DAVIS PTY. LTD. (8).

W. S. TONG (31).

SILK BROS. PTY. LTD. (24-25).

J. G. MUMFORD (35).

GOLDEN VALLEY FRUIT CO. PTY. LTD. (15).

J. W. ROSS (13).

H. M. WADE & CO. (21).

DAVID SMITH PTY. LTD. (3).

SILBERT, SHARP & DAVIES PTY. LTD. (17)

W. A. WATKINS (5).

P. A. PATRIKEOS (36).

G. WOOLF & SONS (29-30).

R. CORNISH & SONS (5).

J. HYMAN & SON (51).

HERBERT WILSON PTY. LTD. (10).

FRANK BOOTH & SONS PTY. LTD. (16).

GEO. LISTER PTY. LTD. (12).

TIM YOUNG & CO. PTY. LTD. (18).

F. W. VEAR PTY. LTD. (28).

YEE HOP LOONG & CO. (32).

H. LOUEY PANG & CO. PTY. LTD. (4).

WING YOUNG & CO. (38).

Office : 21 Wholesale Fruit Market, Queen Street, Melbourne. Phone F 4866.

Correspondence is invited by the Association.

Walnut Culture

Valuable Research Work at E. Malling, England.

Rootstocks — Grafting — Budding.

FOLLOWING A REMARKABLE EXHIBITION of Walnuts under the auspices of the Royal Horticultural Society some eight years ago, owners of Walnut trees in England were invited to send samples of the nuts to the E. Malling Research Station, Kent, England. More than 700 samples were received.

Each of these was subjected to severe tests, and finally, out of the vast number sent, the following have been selected as suitable for propagation and future culture in England: No. 162 (Ixworth), No. 95 (Gloucester), No. 719 (Margate), No. 589 (Dartford), No. 202 (Ipswich), Leeds Castle (Kent), and Patching (Kent), the latter being a good Walnut for pickling.

Four French varieties also are re-

commended, namely, Franquette, Mayette, Meylanaise and Treyve.

All the foregoing produce nuts of good quality and, moreover, they are late in leafing-out, a most important factor in that it renders them less susceptible to damage by Spring frosts.

In conjunction with the selection of varieties, research has also proceeded in the production of satisfactory rootstocks. Hitherto, one-year-old seedlings of *Juglans regia* and *J. nigra* have been used almost exclusively for purposes of propagating Walnuts, owing to the fact that layers and cuttings do not root freely, but it is interesting to learn that experiments with vegetatively raised rootstocks have been proceeding at East Malling for the past three years; several se-

lections of *Juglans* species and hybrids are being tried out, and now that the stools are getting older, satisfactory rooting is being obtained on hybrids of *J. regia* x *J. californica* and *J. nigra* x *J. californica*, known as the Paradox and Royal, respectively. If the rooted layers, when severed from the parent stool, are allowed to grow in the nursery for one year before lifting and grafting, the results are as good as when seedling rootstocks are used, while by using these standardised stocks uniformity of performance in the scion variety is obtained.

Outdoor grafting is unsatisfactory in England, this form of propagation being best carried out under glass in March, with dormant scion wood of one or two years' growth, of medium size, firm and well-ripened, with a small pith area, using one-year-old stocks in pots, or in July and August, using herbaceous scions, quite small scions, being satisfactory if the pith area is just past the pulpy stage.

Very promising results have been obtained experimentally in budding Walnuts with buds of the previous year's wood in May and June, and

we suggest that nurserymen might find in this method a solution to the problem of Walnut propagation. Budding may, incidentally, be carried out successfully on trees up to twenty-five years old.

Walnut flowers are universal, pistillate and staminate flowers being borne on the same tree, but in some cases young trees often bear nutlets (pistillate flowers) years before catkins appear, and even when both kinds of flowers are present they are not always ripe at the same time, and provision must be made, if early cropping is desired, by inter-planting with a variety that produces catkins when quite young, e.g., Meylanaise.

Investigations into the diseases which attack Walnuts, and means whereby they can be controlled, have also been carried out at East Malling. Bacterial blight attacks leaves, stems and fruits, and control measures for this disease are to cut out stem lesions during the dormant season and to spray in Spring, as soon as the trees have leafed out, with Bordeaux Mixture (8:8:100). If, however, late leafing varieties free from disease are planted, little trouble is likely to be experienced from the disease.

Graft disease may cause trouble when the Walnuts are being grafted, but may be controlled satisfactorily by painting the stem of the stock, before it is cut to receive the scion, with a 1 per cent. solution of formalin.

The method of harvesting and storing of the nuts recommended by the East Malling Research workers is as follows:—Remove the shucks as soon as they are ready to fall away from the nuts, wash them in water with the aid of a soft scrubbing brush, allowing the nuts to remain in contact with the water for not more than a few seconds, and then dry them on trays in a current of air. Bleaching is an important item, and for this purpose a solution of chloride of lime has proved most effective, and is prepared as follows:—

Place 3 lb. of chloride of lime in a 5-gallon container, mix to a creamy paste with water; add two gallons of water and stir well. Dissolve 1½ lb. of washing soda in another container and pour into the chloride of lime suspension, then add water to make a total of 5 gallons. After stirring, allow the mixture to settle for 24 hours. The clear liquid is then poured off, and may be used for bleaching. The Walnuts are placed in this solution for about three minutes, then drained and dried in single layers.

A good storage medium for the nuts consists of equal parts by weight of slightly moist coconut fibre refuse and common salt, the nuts being blaced between layers of this in earthenware pots and then kept in a cool place.

GRAPEFRUIT PRODUCTION IN U.S.S.R.

Under the Russian State Farm System, 50 Grapefruit orchards have been established at Poti, in the Caucasus region, and are expected to bear their first fruit this year. The trees were brought from Florida. Windbreaks of Australian eucalypts have been provided.

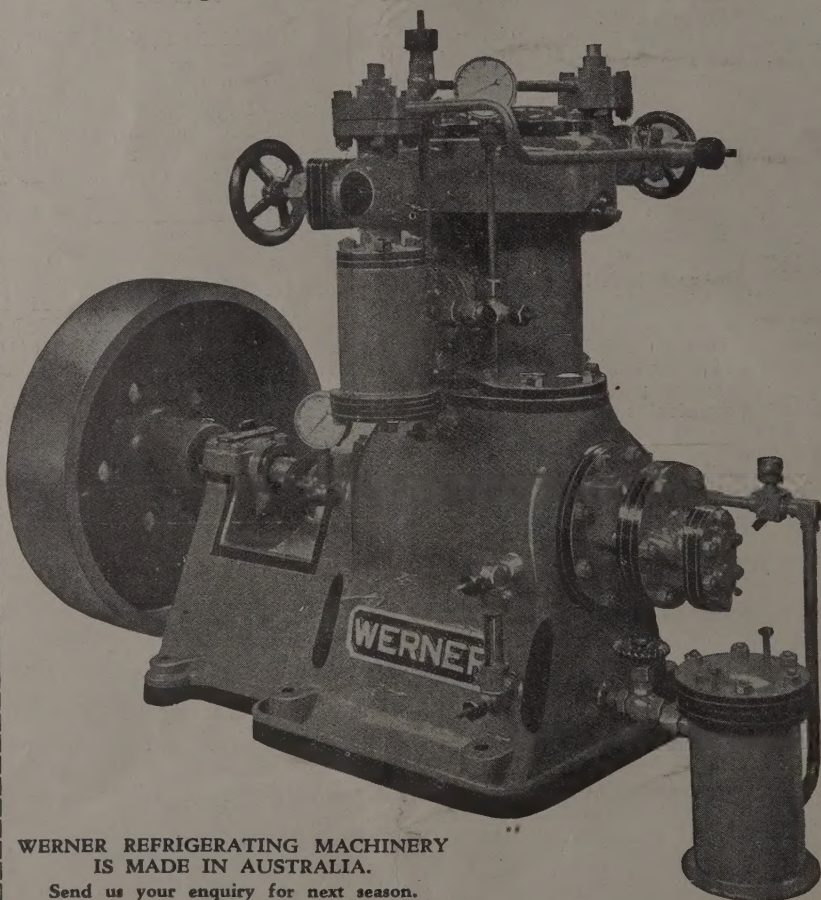
CANNED DRINKS TOO.

It is claimed that canned beer has come to stay in U.S.A., where the brewers are attempting to capitalise on the predisposition of Americans to become can-conscious. Now comes advice that wine makers in U.S.A. not to be outdone by the opposition from beer, are marketing wine in cans lined with synthetic resin.

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